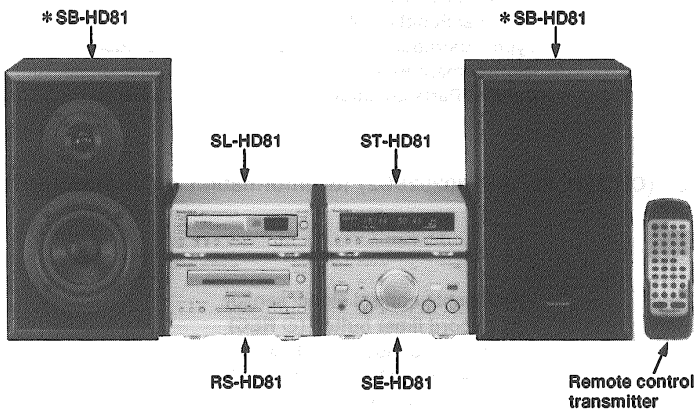
ORDER NO. AD9802026C2

Service Manual

Tuner



Tuner

ST-HD81

Colour

(N) .....Gold Type

Area

E .....Europe.

System: SC-HD81

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Specifications

Pre-amplifier section
Input sensitivity/impedance
EXTERNAL: 250 mV/15 kΩ
Output level
EXTERNAL: 250 mV/1.5 kΩ
Frequency response
EXTERNAL: 50 Hz—25 kHz
S/N
EXTERNAL: DIN 82 dB (83 dB, IHF)

FM tuner section
Frequency range: 87.50—108.00 MHz (0.05 MHz steps)
Sensitivity: 1.8 µV (IHF usable)
S/N 26 dB: 1.5 µV
S/N
MONO: 70 dB (75 dB, IHF)
Stereo separation
1kHz: 35 dB
Antenna terminal(s): 75Ω (unbalance)

AM tuner section
Frequency range: 522—1611 kHz (9 kHz steps) 530—1620 kHz (10 kHz steps)
Sensitivity (S/N 20 dB): 500 µV/m

Timer section
Clock: Quartz-lock type
Function: 24-hour programmable; Play timer (1 time), Rec timer (1 time) Sleep (120 min., 30 min. intervals)
Setting: 1 minute—23 hours 59 minutes (1 min. intervals)

General
Dimensions (W×H×D): 196(Wide)/ 67(High)/ 235(Depth) mm
Weight: 1.2 kg

Note:
1. Specifications are subject to change without notice.
2. Weight and dimensions are approximate.

System/SC-HD81:
Tuner: ST-HD81, Compact Disc Changer: SL-HD81, Amplifier: SE-HD81, Cassette Deck: RS-HD81, Speakers: *SB-HD81

Notes: * ..... Made in PAES

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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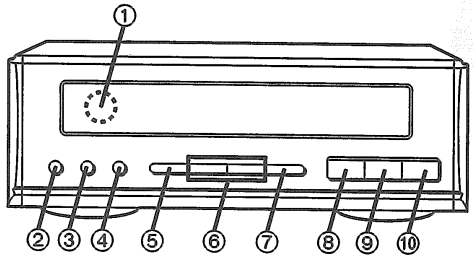
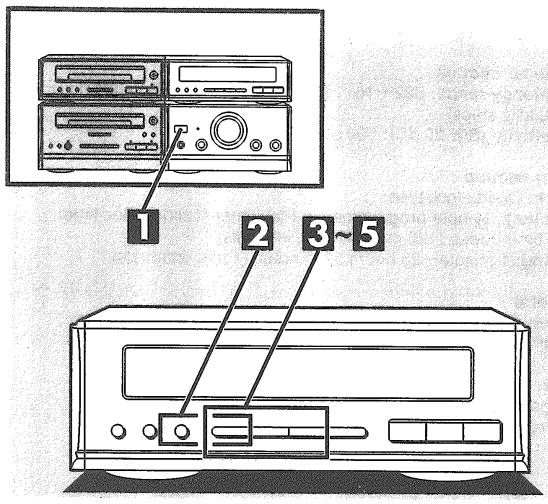
NOTE:
Refer to the service manual for Model No. SE-HD81 (ORDER No. AD9802028C2) for information on"Accessories", "Installation", "Connections" and "Packaging".

Location of Controls



① Remote control signal sensor
② Record timer button (◴ REC)
③ Play timer button (◴ PLAY)
④ Clock/timer button (CLOCK/TIMER)
⑤ Set button (SET)
⑥ Tuning/time adjust buttons (∨, ∧ TUNING/TIME ADJUST)
⑦ Tuning mode select button (TUNING MODE)
⑧ Source input select button (INPUT SELECTOR)
⑨ RDS display mode select button (RDS DISPLAY MODE)
⑩ Band select button (FM/AM)

Setting the Time



When "--:--" appears:
It flashes when you connect the AC power supply cord for the first time or if there has been a power failure.
Reset the time as explained above.

If the minutes setting is off:
1. Press CLOCK/TIMER.
2. Press SET 3 times.
3. Press ∨ or ∧ to set the minute, and then press SET.

To display the clock again:
Press CLOCK/TIMER.
The clock display will appear for about 8 seconds.

For your reference:
When you turn OFF the system from the POWER button, the system goes on standby and the STANDBY indicator lights up.

The tuner displays the time, frequency and other information on CDs and tapes.

This is a 24-hours display clock.

These instructions explain how to set the timer for 16:25 on Wednesday.

1 Switch on the power.

2 ① Press CLOCK/TIMER to show "CLOCK".
Every time you press the button, the indication changes in the order of CLOCK→◴ REC→◴ PLAY→Original display.
Within 8 seconds:
② Press SET.

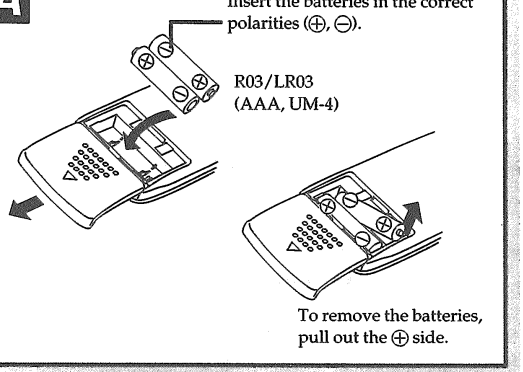
3 ① Press ∨ or ∧ to select the day.
Every time you press one of the buttons, the indication changes in the order of SUN⇄MON⇄TUE⇄WED⇄THU⇄FRI⇄SAT.
② Press SET.

4 ① Press ∨ or ∧ to select the hour.
② Press SET.

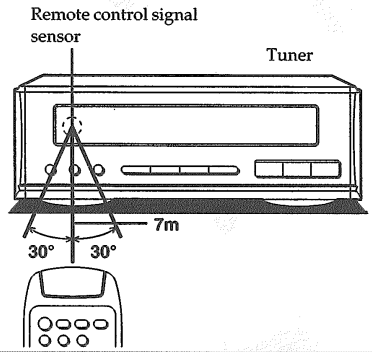
5 ① Press ∨ or ∧ to select the minutes.
② Press SET to finish setting the time.

The display will return to the previous display after about 3 seconds.

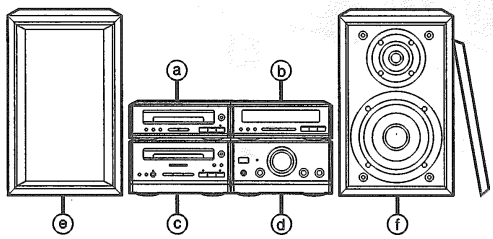
A



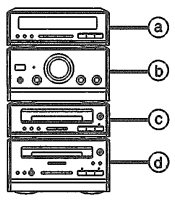
B



C



D



Preparing for the Remote Control

Battery installation A

- Do not mix old and new batteries, or batteries of different types (manganese and alkaline, etc.).
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use rechargeable type batteries.

The battery life is about one year.

The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.

Correct method of use B

- Aim the remote control's transmission window toward the unit's sensor. Avoid any obstacles.
- The maximum distance is within 7 meters directly facing toward the remote control signal sensor.
- Be sure the transmission window and the unit's sensor are free from dust. Excessive dust might affect its performance.
- The operation may not be correct if direct sunlight or other strong light source strikes the receiving sensor of this unit. If there is a problem, place the unit away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the system.
- Never place heavy items.
- Do not disassemble or reconstruct.
- Do not spill water or other liquids.

Installation

Locating the components

Side-by-side set-up C

ⓐ CD changer
ⓑ Tuner
ⓒ Cassette deck
ⓓ Amplifier
ⓔ Left speaker
ⓕ Right speaker

Stacking D

ⓐ Tuner
ⓑ Amplifier
ⓒ CD changer
ⓓ Cassette deck

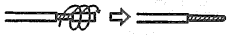
Caution
Use the speakers only with the recommended system. Failure to do so may lead to damage to the amplifier and/or the speaker, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.

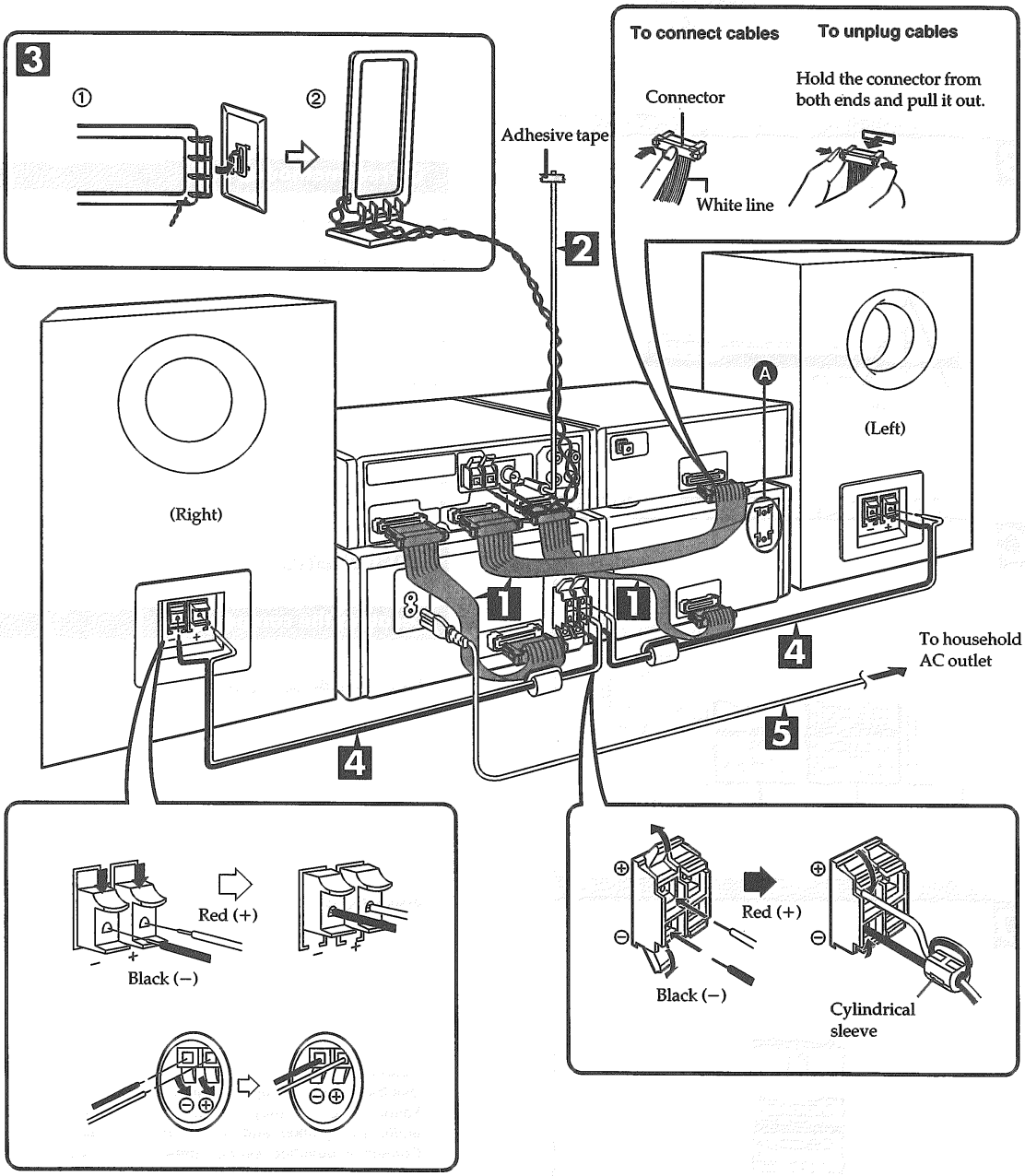
Note
Left and right speakers are exactly the same.

Connections

Connect the AC mains lead after you have connected all other cables.

To prepare the AM loop antenna wire and speaker cords, twist the vinyl cover tip and pull off.





1 Connect the flat cables.

1. Connect the short flat cable to the terminal of the A1 and A2.
2. Connect the long thick flat cable to the terminal of the B1 and B2.
3. Connect the long thin flat cable to the terminal of the C1 and C2.

Note

Do not try connecting or disconnecting the flat cables while the power is switched to ON.

After connection:

Keep cables as flat against the back of the unit as possible.

2 Connect the FM indoor antenna.

Tape the antenna to a wall or column, in a position where radio signals are received with the least amount of interference.

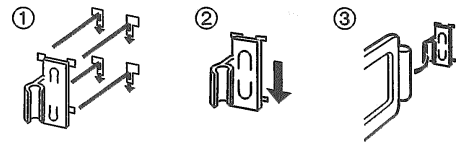
Note

When you cannot get a good reception with this FM indoor antenna, we recommend you install an FM outdoor antenna (not included).

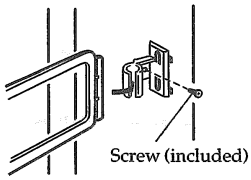
3 Connect the AM loop antenna.

You can also install the AM loop antenna on the rear of the cassette deck, wall or pillars.
In this case, be sure to use the antenna holder with the hole.

•To install on the cassette deck rear (Ⓐ)



•To install on walls or pillars



Note

To minimize noise pickup, bundle the loop antenna cord using a tape or so to keep the flat cables away from the AM loop antenna cord.

4 Connect the right (R) and left (L) front speaker cables.

Note

- For SC-HD81 connect the end of the speaker cable with the cylindrical sleeve to the amp side.
- To prevent damage to circuitry, never short-circuit positive (+) and negative (−) speaker wires.
- Be sure to connect only positive (red) wires to positive (+) terminals and negative (black) wires to negative (−) terminals.

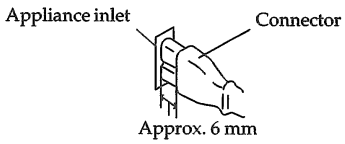
These speakers are made so as to be able to be used in close proximity to the TV, but irregular coloring may result due to how the system is placed. If such distortion occurs, turn off the TV for sometime between 15 and 30 minutes. The demagnetizing function of the TV will eliminate the distortion. If the irregular coloring is still visible, then move the speaker further away from the TV. Please note that if there is a magnetic object near the TV, irregular coloring may result due to the interaction between the TV and the speakers.

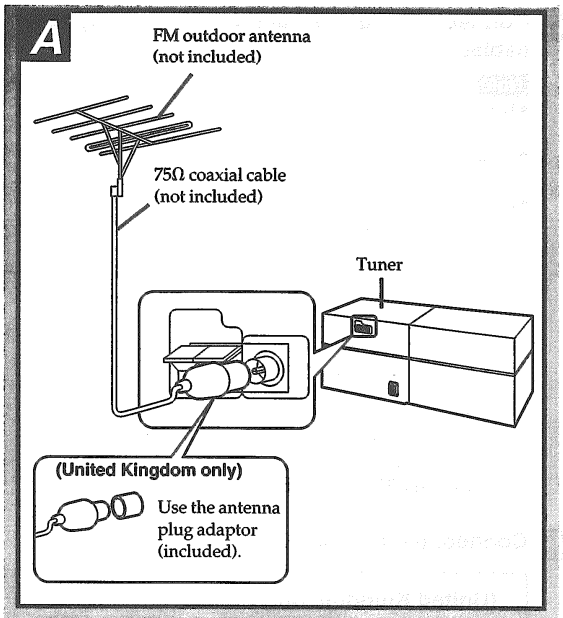
5 Connect the AC mains lead.

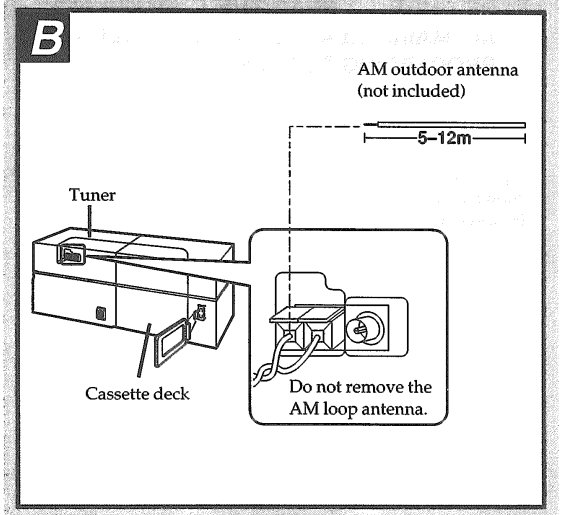
(United Kingdom only)
BE SURE TO READ THE CAUTION FOR AC MAINS LEAD ON PAGE 4 BEFORE PROCEEDING TO STEP 5.

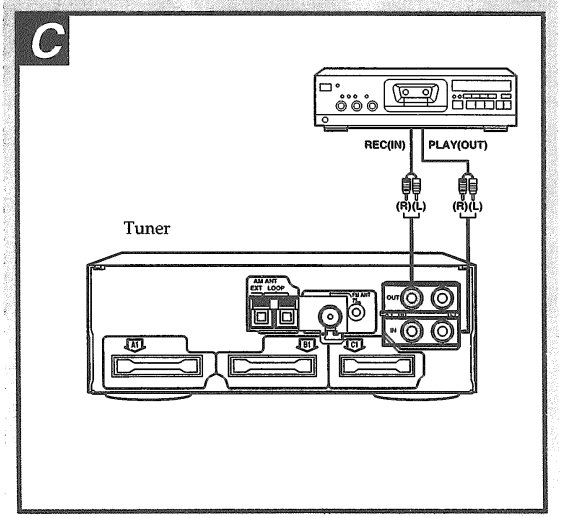
Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.









Optional antenna connections

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

FM outdoor antenna (not included) A

Note

An outdoor antenna should be installed by a competent technician only.

AM outdoor antenna (not included) B

Connect the outdoor antenna without removing the AM loop antenna. Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.

Note

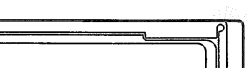
When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

External unit connections

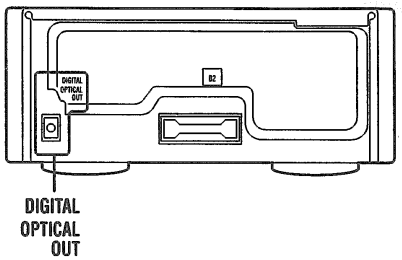
Connecting a cassette deck C

- Make sure that the power supply for all components has been turned off before making any connections.
- For details, refer to the operating instructions of the cassette deck which is to be connected.
- All peripheral components and cables sold separately.

Stereo connection cable
White (L)
Red (R)



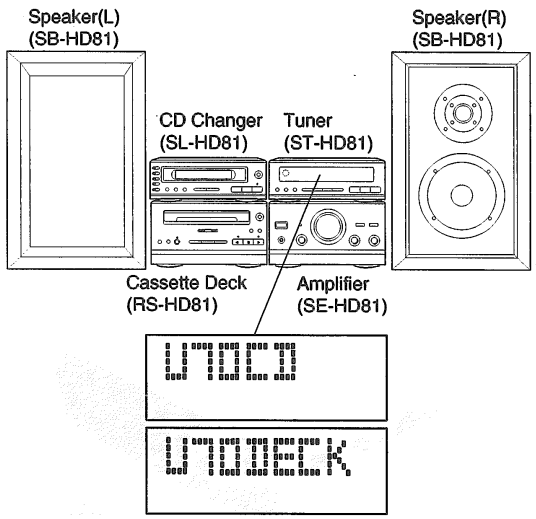
Connections to "DIGITAL OPTICAL OUT" terminal



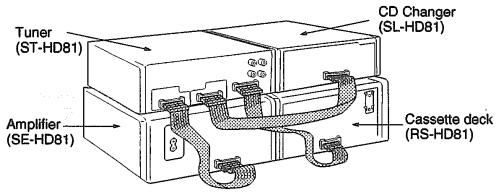
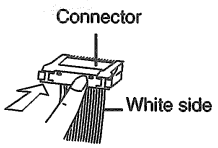
Before using this terminal, take out the dust protection cap.
Connect an optical-fiber cable to the optical input terminal of the DCC or minidisc deck (cables and components not included).

About the Self-Diagnostic Mode

This unit is equipped with a self-diagnostic function which, in the event of a malfunction, automatically displays a code indicating the nature of the malfunctions. Use this self-diagnostic function when servicing the unit.

Display method	Display location
To display the malfunction code U70 CD: U70 DECK:.... Automatically displays on the tuner when a malfunction occurs. F61 ..... Automatically displays on the tuner when a malfunction occurs. **To return to the normal display** **1. For U70 CD/U70 DECK:** • Press an any operation button on the tuner. • To re-display the code, switch the power off (POWER STANDBY button), and then switch power back on again. **2. For F61:** • If "F61" is displayed, the power will automatically be switched off and the standby indicator will light up. • "F61" will be displayed for 3 seconds, and then the clock will be displayed. • To re-display the code, switch the power on. "F61" will be redisplayed, and then after 3 seconds the clock will be displayed and the power will automatically switch off.	

Display contents

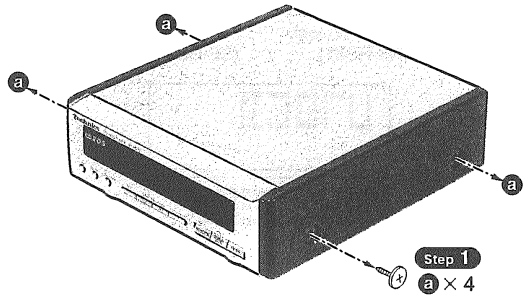
Display code	Problem or condition	Correction procedure
U70 CD **U70 DECK** (displayed automatically)	A bus-line communications error has occurred as a result of the flat cables being inserted incorrectly, thus preventing the system from operating. 1. If "U70" is displayed on the tuner, the Cassette deck or CD changer cannot be operated by remote control.	 1. To check for correct insertion of the flat cables ①Match each connector with the color (black/ white) of the connection port and insert until you hear a click. ②Insert the flat cables at the back of the unit in the order indicated. Make sure the white side of the cable is on your right side.  2. Breakage of flat cable (Check and replace as necessary.) 3. If the problem is not corrected by items (1.) and (2.) above, this indicates a faulty IC. **ST-HD81:** IC901 (M38198MC092F) **SL-HD81:** IC301 (LC66538A4K20) **RS-HD81:** IC701 (M37471M4685F) Check these IC's and replace as necessary.
F61	When the power switch is switched on, it automatically switches back off, making it impossible to switch power on.	• Faulty amplifier (SE-HD81) output IC (IC505, 506). (When a DC voltage is applied to the speaker terminals.)

■ Operation Checks and Main Component Replacement Procedures

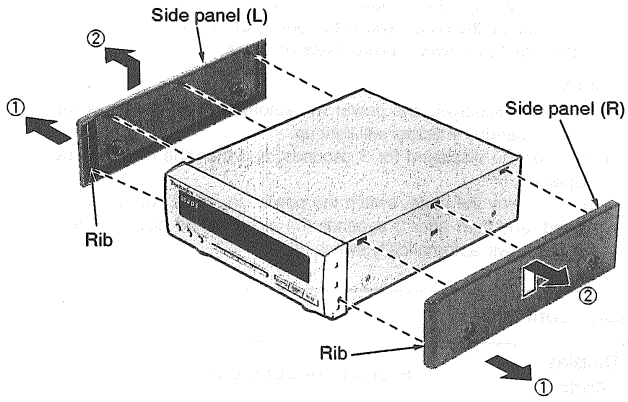
NOTE **1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**

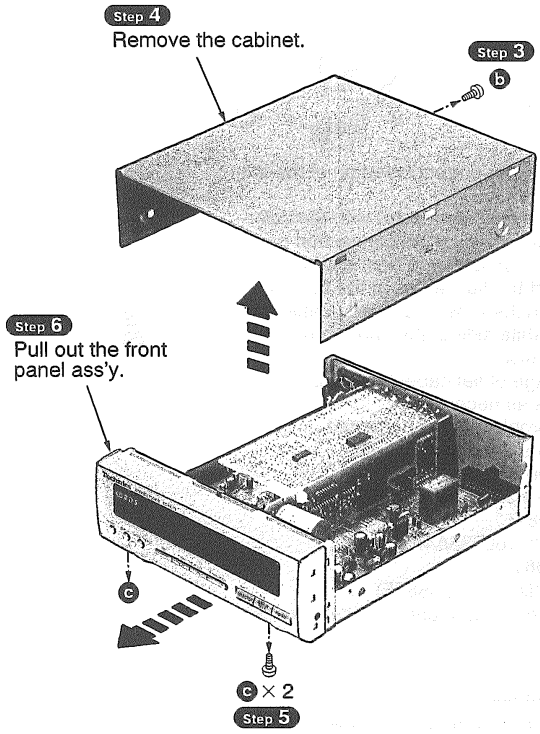
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

1. Checking for the RDS P.C.B., tuner P.C.B. and FL P.C.B.

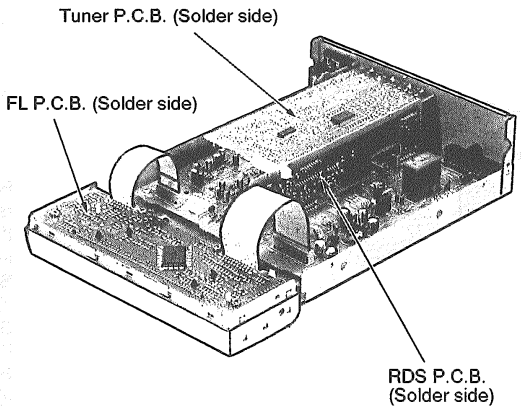


Step 2
Remove the side panel (L),(R).
• Spread the lower part of the side panels in the direction of arrow (➡①) to release the ribs, and then lift to remove the side panels (➡②).



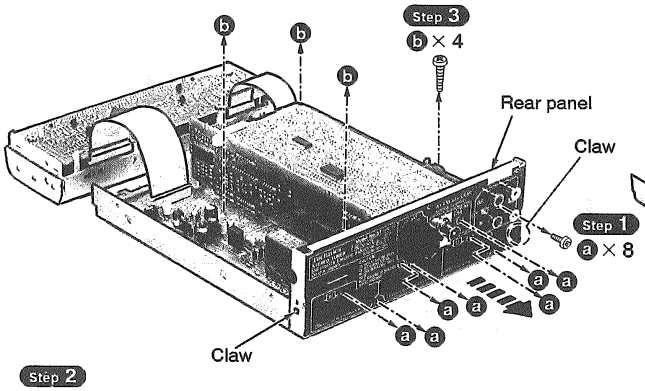


• Check the RDS P.C.B., tuner P.C.B. and FL P.C.B. as shown below.



2. Checking for the main P.C.B.

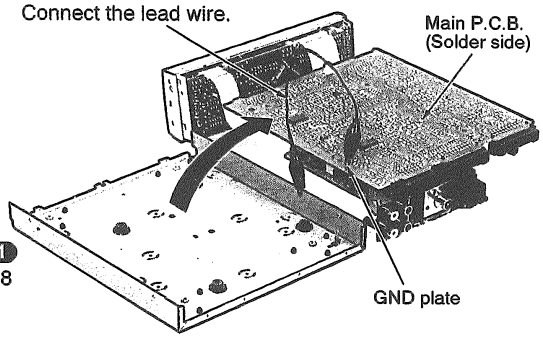
• Follow Step 1 ~ Step 6 in item 1 on page 4.



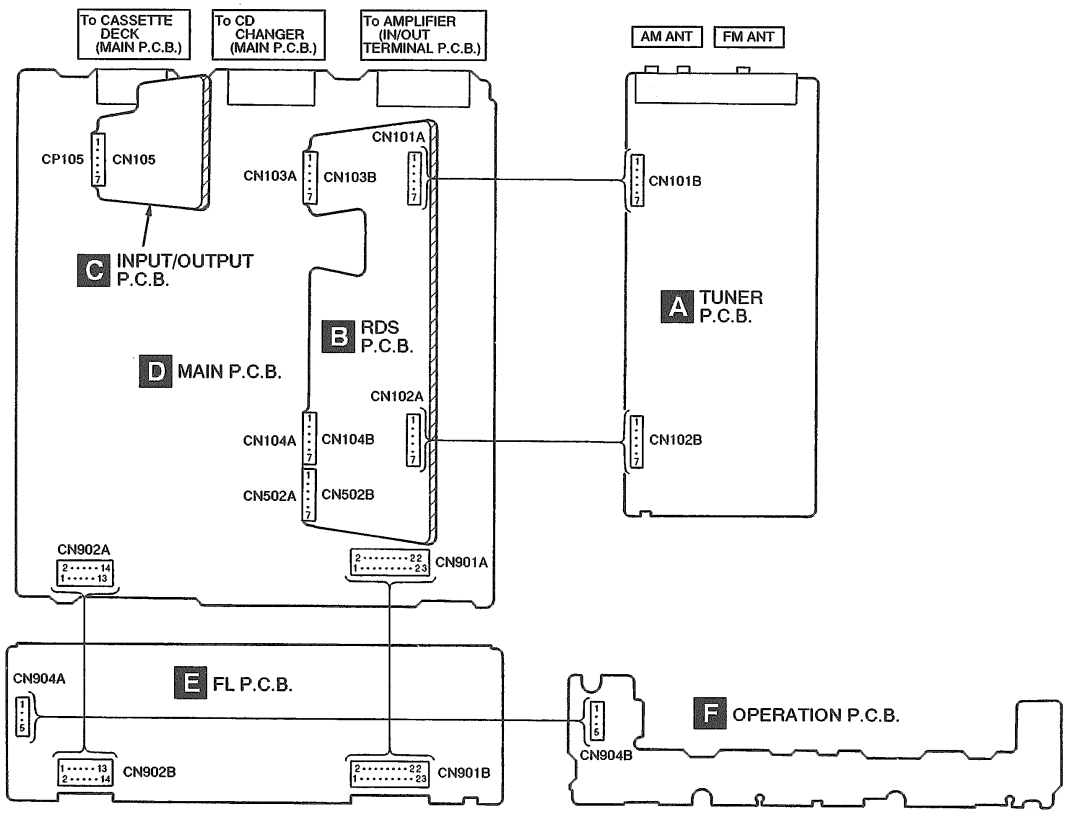
Step 2
Release the 2 claws, and then remove the rear panel.

• Check the main P.C.B. as shown below.

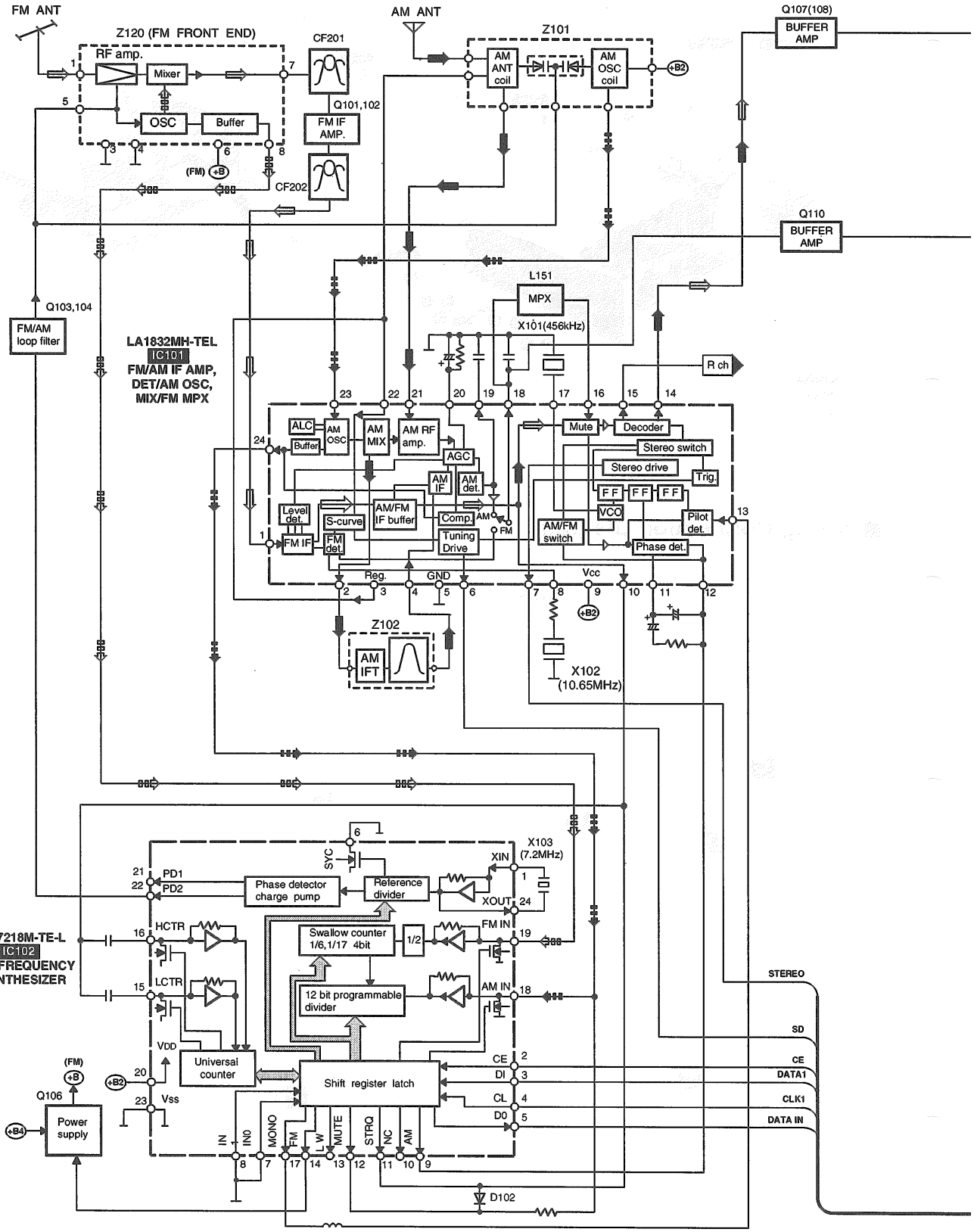
Step 4
Connect the lead wire.

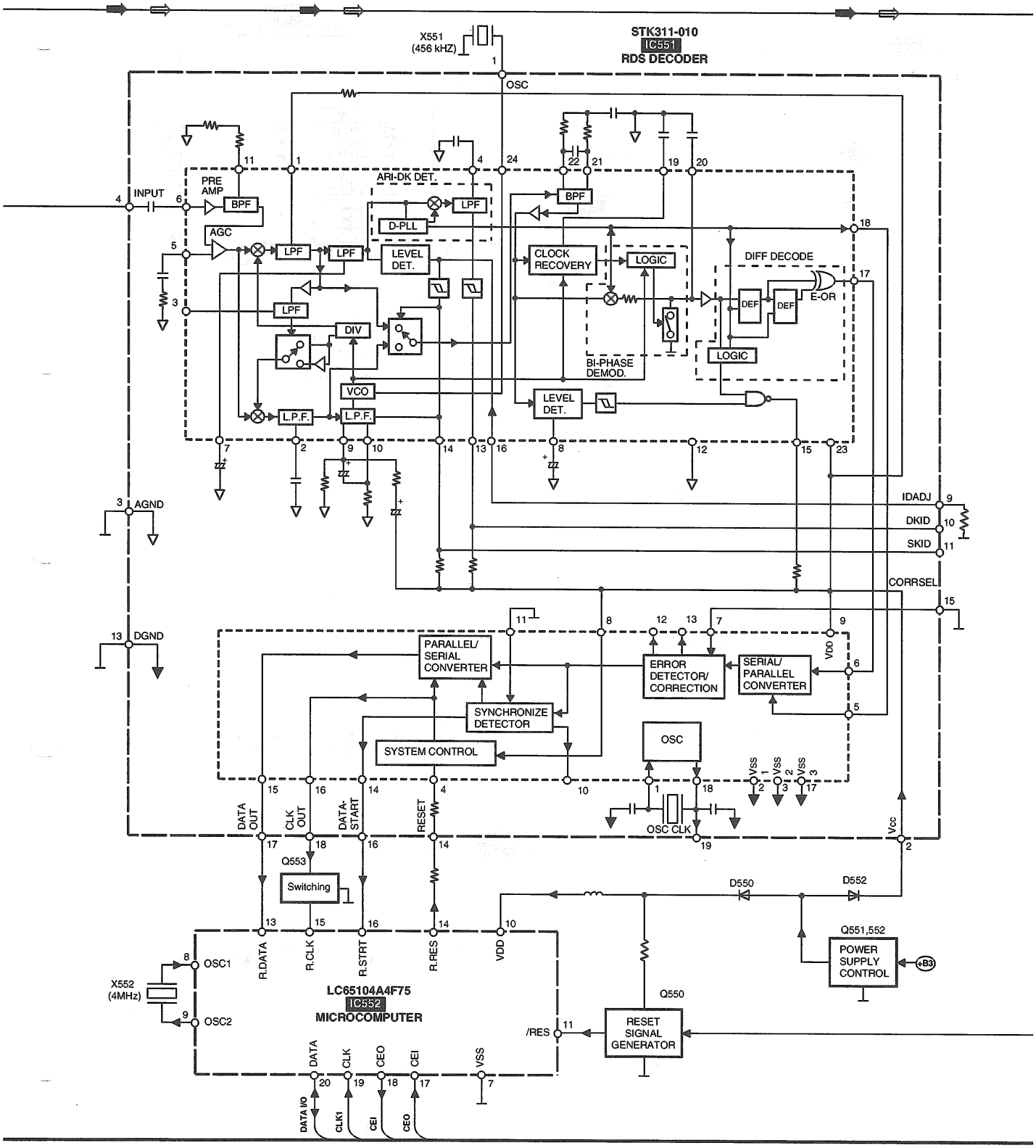


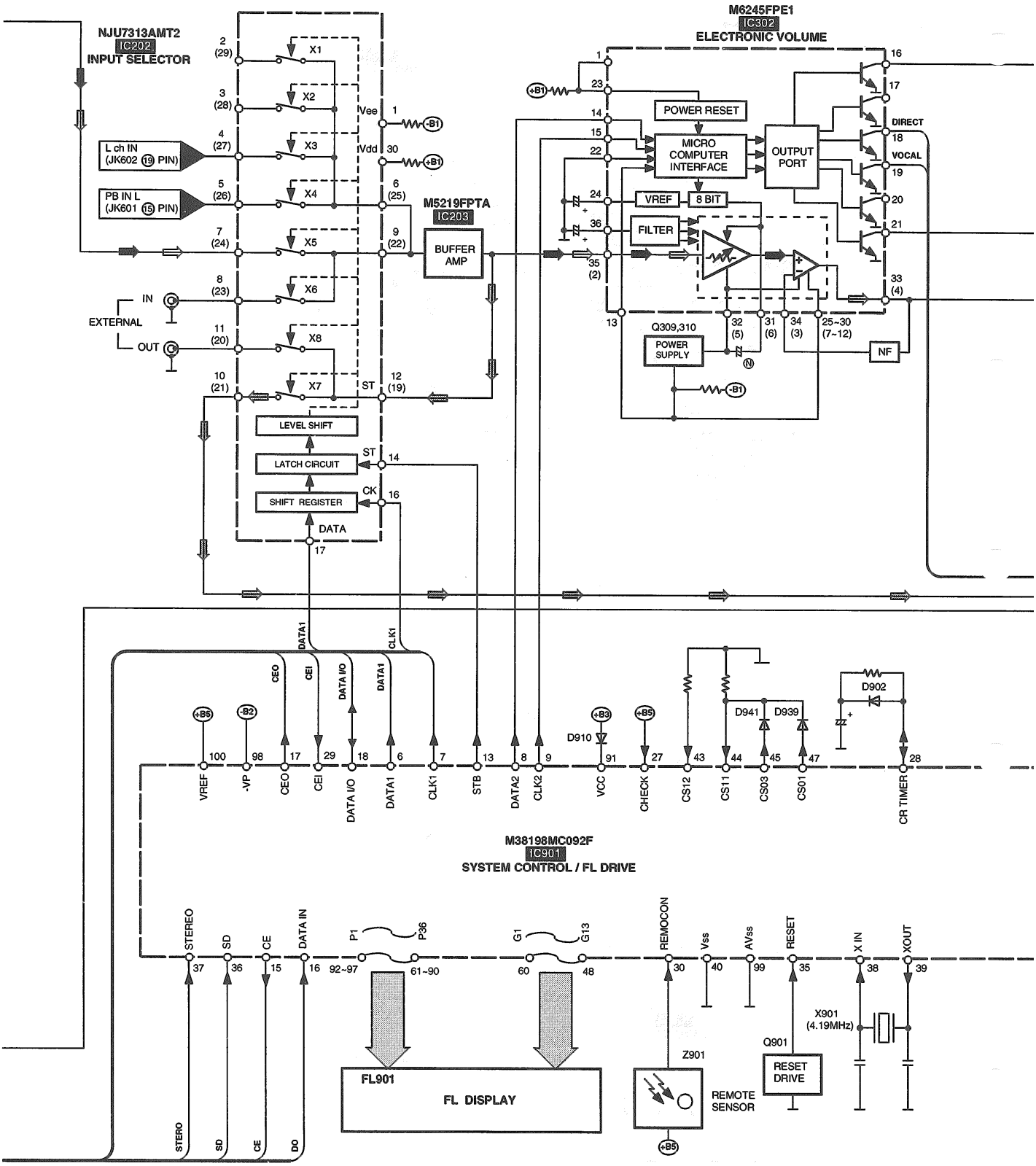
■ Wiring Connection Diagram

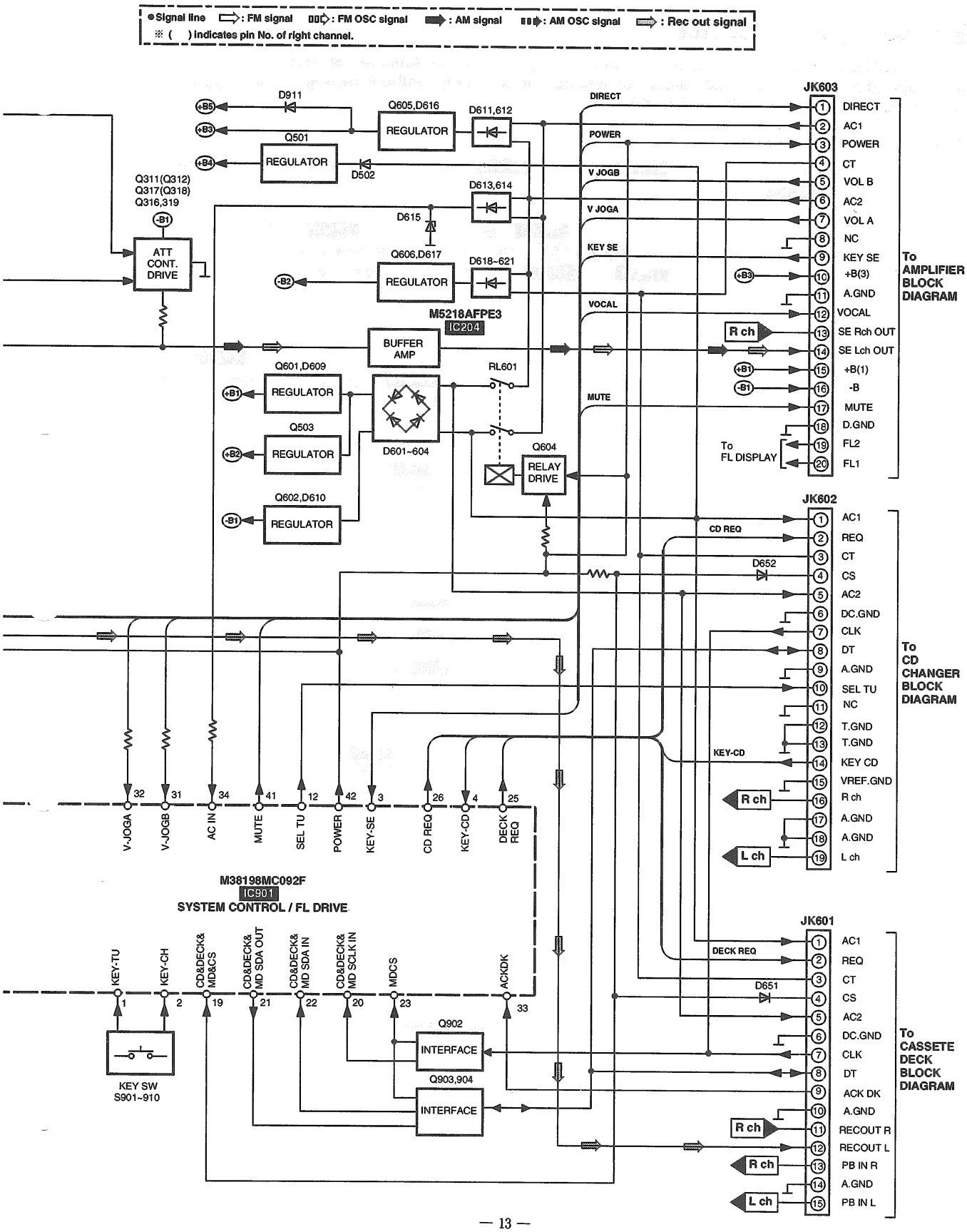


Block Diagram




X551
(456 kHZ)
STK311-010
IC551
RDS DECODER
OSC
PRE
AMP
INPUT
BPF
AGC
ARI-DK DET.
LPF
D-PLL
LEVEL
DET.
DIV
VCO
L.P.F.
CLOCK
RECOVERY
LOGIC
DIFF DECODE
DEF
E-OR
BI-PHASE
DEMOD.
AGND
DGND
IDADJ
DKID
SKID
CORRSEL
PARALLEL/
SERIAL
CONVERTER
ERROR
DETECTOR/
CORRECTION
SERIAL/
PARALLEL
CONVERTER
VDD
SYNCHRONIZE
DETECTOR
SYSTEM CONTROL
OSC
Vss
DATA
OUT
CLK
OUT
DATA-
START
RESET
OSC CLK
Vcc
Q553
Switching
D550
D552
Q551,552
POWER
SUPPLY
CONTROL
+B3
X552
(4MHz)
OSC1
OSC2
R.DATA
R.CLK
R.STRT
R.RES
VDD
LC65104A4F75
IC552
MICROCOMPUTER
Q550
/RES
RESET
SIGNAL
GENERATOR
DATA
CLK
CEO
CEI
VSS
DATA I/O
CLK1
CEI
CEO


NJU7313AMT2
IC202
INPUT SELECTOR
L ch IN
(JK602 19 PIN)
PB IN L
(JK601 15 PIN)
IN
EXTERNAL
OUT
X1
X2
X3
X4
X5
X6
X8
X7
Vee
Vdd
ST
M5219FPTA
IC203
BUFFER AMP
LEVEL SHIFT
LATCH CIRCUIT
SHIFT REGISTER
CK
DATA
M6245FPE1
IC302
ELECTRONIC VOLUME
POWER RESET
MICRO COMPUTER INTERFACE
OUTPUT PORT
VREF
8 BIT
FILTER
DIRECT
VOCAL
Q309,310
POWER SUPPLY
NF
DATA1
CLK1
CEO
CEI
DATA I/O
D910
D941
D939
D902
VREF
-VP
STB
DATA2
CLK2
VCC
CHECK
CS12
CS11
CS03
CS01
CR TIMER
M38198MC092F
IC901
SYSTEM CONTROL / FL DRIVE
STEREO
SD
CE
DATA IN
REMOCON
Vss
AVss
RESET
X IN
XOUT
FL901
FL DISPLAY
Z901
REMOTE SENSOR
Q901
RESET DRIVE
X901
(4.19MHz)
STERO
DO


● Signal line : FM signal : FM OSC signal : AM signal : AM OSC signal : Rec out signal
※ ( ) Indicates pin No. of right channel.
JK603
DIRECT
AC1
POWER
CT
VOL B
AC2
VOL A
NC
KEY SE
+B(3)
A.GND
VOCAL
SE Rch OUT
SE Lch OUT
+B(1)
-B
MUTE
D.GND
FL2
FL1
To AMPLIFIER BLOCK DIAGRAM
To FL DISPLAY
R ch
JK602
AC1
REQ
CT
CS
AC2
DC.GND
CLK
DT
A.GND
SEL TU
NC
T.GND
T.GND
KEY CD
VREF.GND
R ch
A.GND
A.GND
L ch
CD REQ
KEY-CD
To CD CHANGER BLOCK DIAGRAM
JK601
AC1
REQ
CT
CS
AC2
DC.GND
CLK
DT
ACK DK
A.GND
RECOUT R
RECOUT L
PB IN R
A.GND
PB IN L
DECK REQ
To CASSETE DECK BLOCK DIAGRAM
D911
Q605,D616
REGULATOR
D611,612
Q501
REGULATOR
D502
Q311(Q312)
Q317(Q318)
Q316,319
D615
D613,614
ATT CONT. DRIVE
Q606,D617
REGULATOR
D618~621
M5218AFPE3
IC204
BUFFER AMP
Q601,D609
REGULATOR
RL601
Q503
REGULATOR
D601~604
Q604
RELAY DRIVE
Q602,D610
REGULATOR
D652
D651
V-JOGA
V-JOGB
AC IN
MUTE
SEL TU
POWER
KEY-SE
CD REQ
KEY-CD
DECK REQ
M38198MC092F
IC901
SYSTEM CONTROL / FL DRIVE
KEY-TU
KEY-CH
CD&DECK& MD&CS
CD&DECK& MD SDA OUT
CD&DECK& MD SDA IN
CD&DECK& MD SCLK IN
MDCS
ACKDK
KEY SW S901~910
Q902
INTERFACE
Q903,904
INTERFACE

■To Supply Power Source

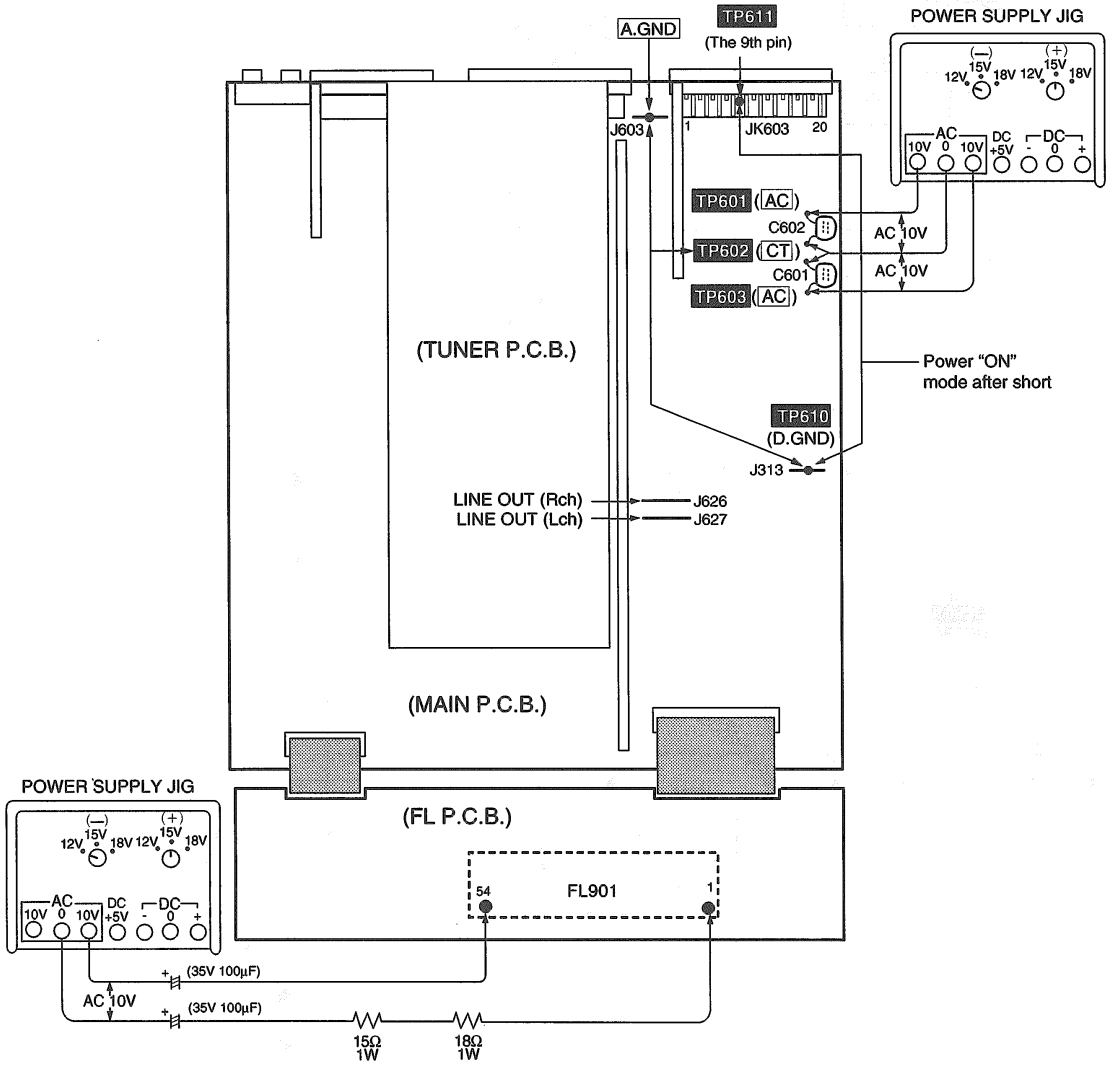
This unit ST-HD81 is designed to operate on power supplied from the Amplifier SE-HD81.
When operating the unit ST-HD81 alone for testing and servicing, without having power supplied from the Amplifier SE-HD81, use the following method.

Power Supply to Main Circuit

1. Short the section between the test points TP602 (CT) and TP610 (D.GND), and as well as the section between the test points A.GND and TP610 (D.GND).
2. Connect the 10V AC power to pin ① of the indicator module FL901 and the GND terminal to pin ㊹ of the same FL901 module.
3. Apply 10V AC power to the section between the point TP601 (AC) and the point TP602 (CT) as well as the section between the point TP603 (AC) and the point TP602 (CT). This unit comes to stand-by mode.
4. Short the section between the test points TP611 and TP610 (D.GND) for a moment. The main circuit comes to power ON mode. (Whenever this operation is performed, power, ON/OFF mode is repeated.)

To Check Signals

Connect the oscilloscope to the section between the point LINE OUT (Rch) of jumper J610 and the point TP610 (D.GND) as well as the section between the point LINE OUT (Lch) of jumper J611 and the TP610 (D.GND), or the speaker with the built-in amplifier to the EXTERNAL (OUT) terminals and check if the signals are outputting from this unit.



Schematic Diagram (Parts list on pages 29~32.)

- This schematic diagram may be modified at any time with development of new technology.

A TUNER CIRCUIT 16, 17
B RDS CIRCUIT 18
C INPUT/OUTPUT CIRCUIT 19
D MAIN CIRCUIT ..... 19~21
E FL CIRCUIT 22, 23
F OPERATION CIRCUIT 23

Notes:

- **S901:** Record timer switch (⏲ REC)
- **S902:** Play timer switch (⏲ PLAY)
- **S907:** Tuning mode select switch (TUNING MODE)
- **S903:** Clock/timer switch (CLOCK/TIMER)
- **S904:** Set switch (SET)
- **S905, 906:** Tuning/Time adjust switch (TUNING/TIME ADJUST)
  (S905: DOWN, S906: UP)
- **S908:** Source input select switch (INPUT SELECTOR)
- **S909:** RDS display mode switch (RDS DISPLAY MODE)
- **S910:** FM/AM switch (FM/AM)

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

- Voltage values and waveforms are measured as indicated in the schematic diagram when test points between TP602 and TP610, and between TP610 and A. GND, and between TP609 and A. GND are shorted.

  No mark: FM mode ( ): AM mode

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-nose (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

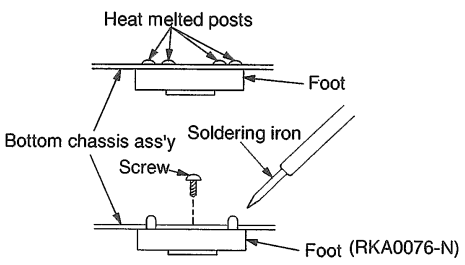
- **Caution!**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
  Cover the parts boxes made of plastics with aluminum foil.
  Ground the soldering iron.
  Put a conductive mat on the work table.
  Do not touch the legs of IC or LSI with the fingers directly.

- Voltage and signal line

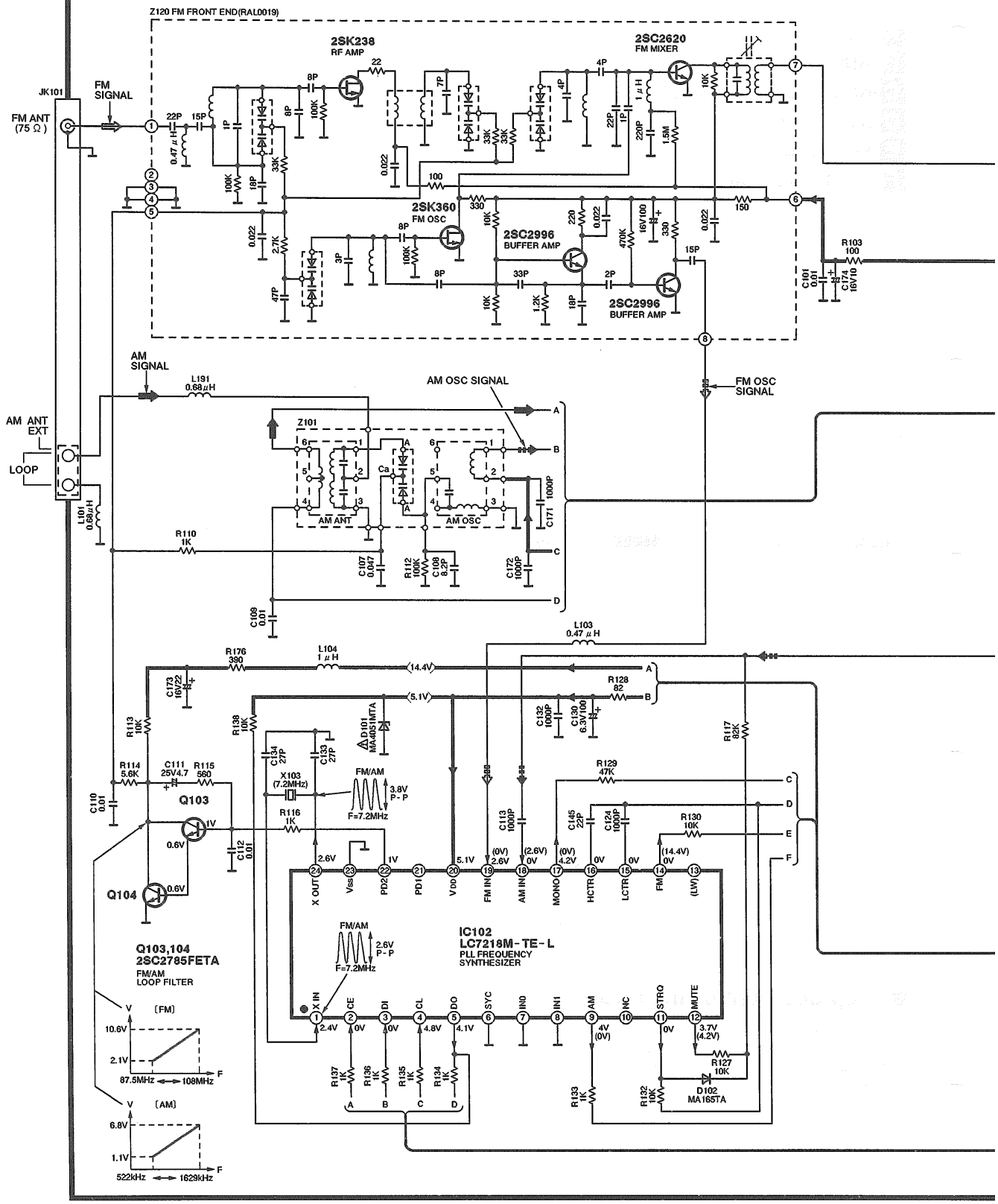
▬▶	: Positive voltage line	▬▶▬	: Negative voltage line
▭▷	: FM signal line	▫▫▫▷	: FM OSC signal line
▬▶	: AM signal line	▪▪▪▶	: AM OSC signal line
▭▷	: REC OUT line		

Replacement of the Foot

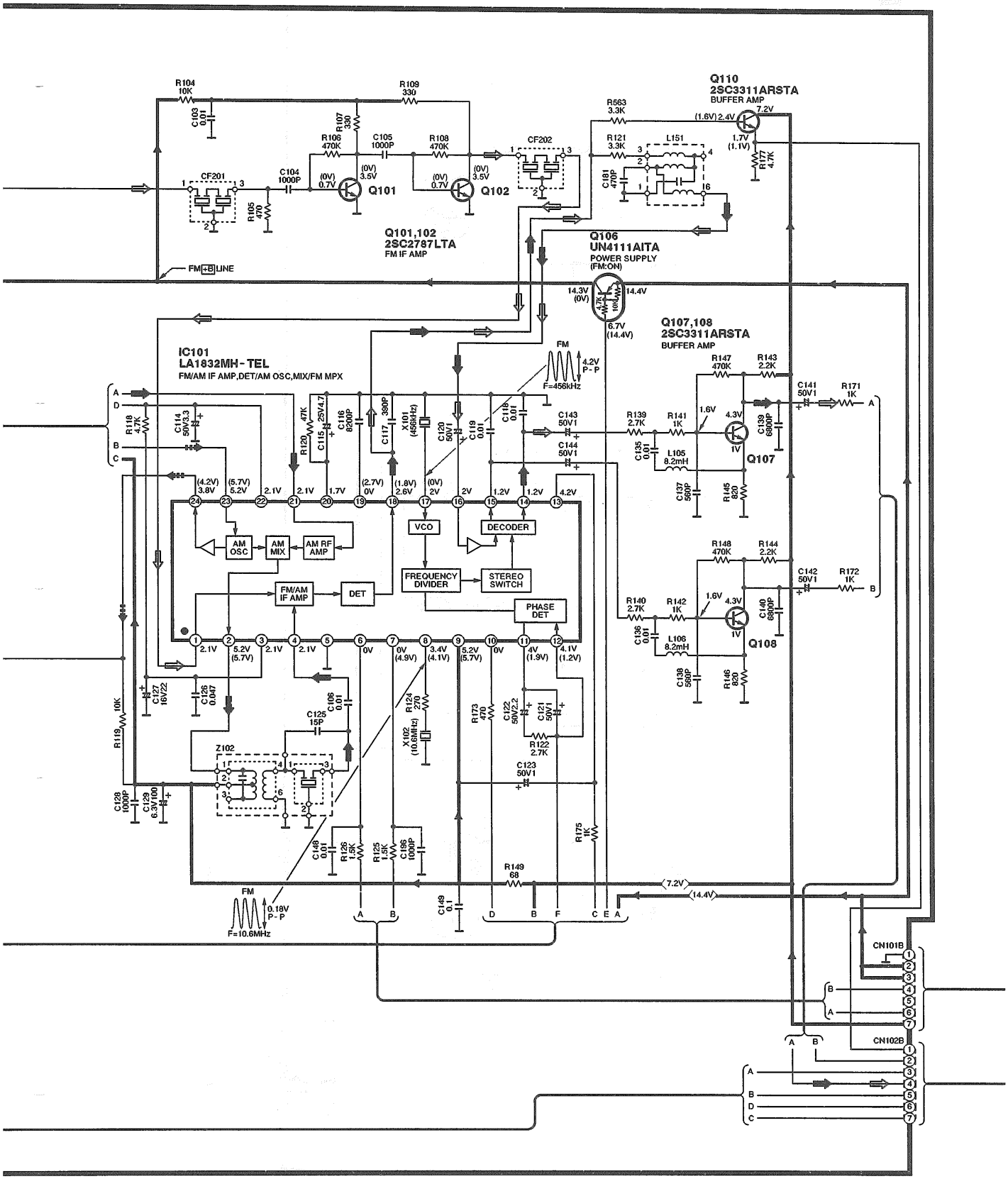
1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0076-N) on the Bottom board ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



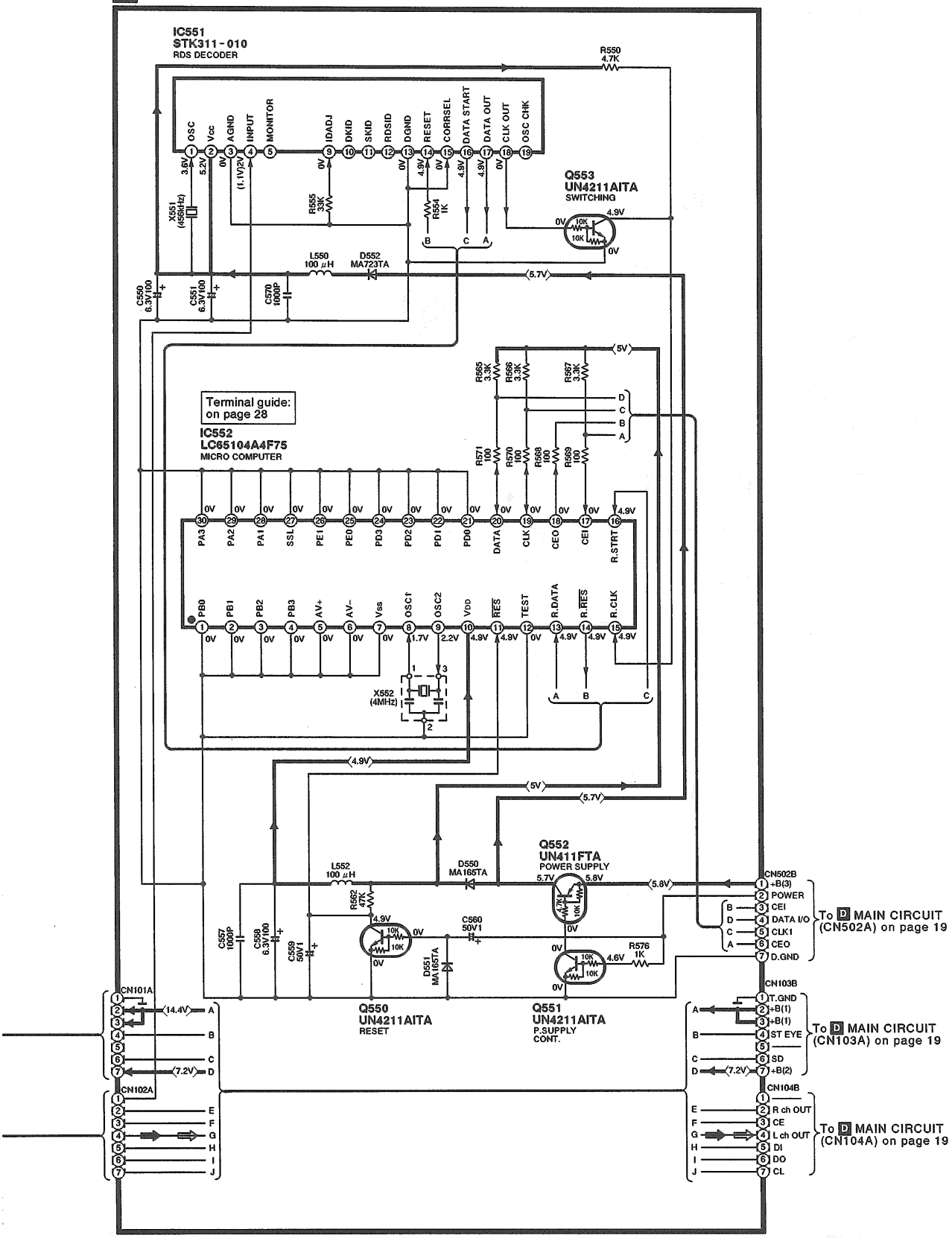
A TUNER CIRCUIT (P.C.Board:on page 24)



Notes: : FM signal : FM OSC signal
: AM signal : AM OSC signal



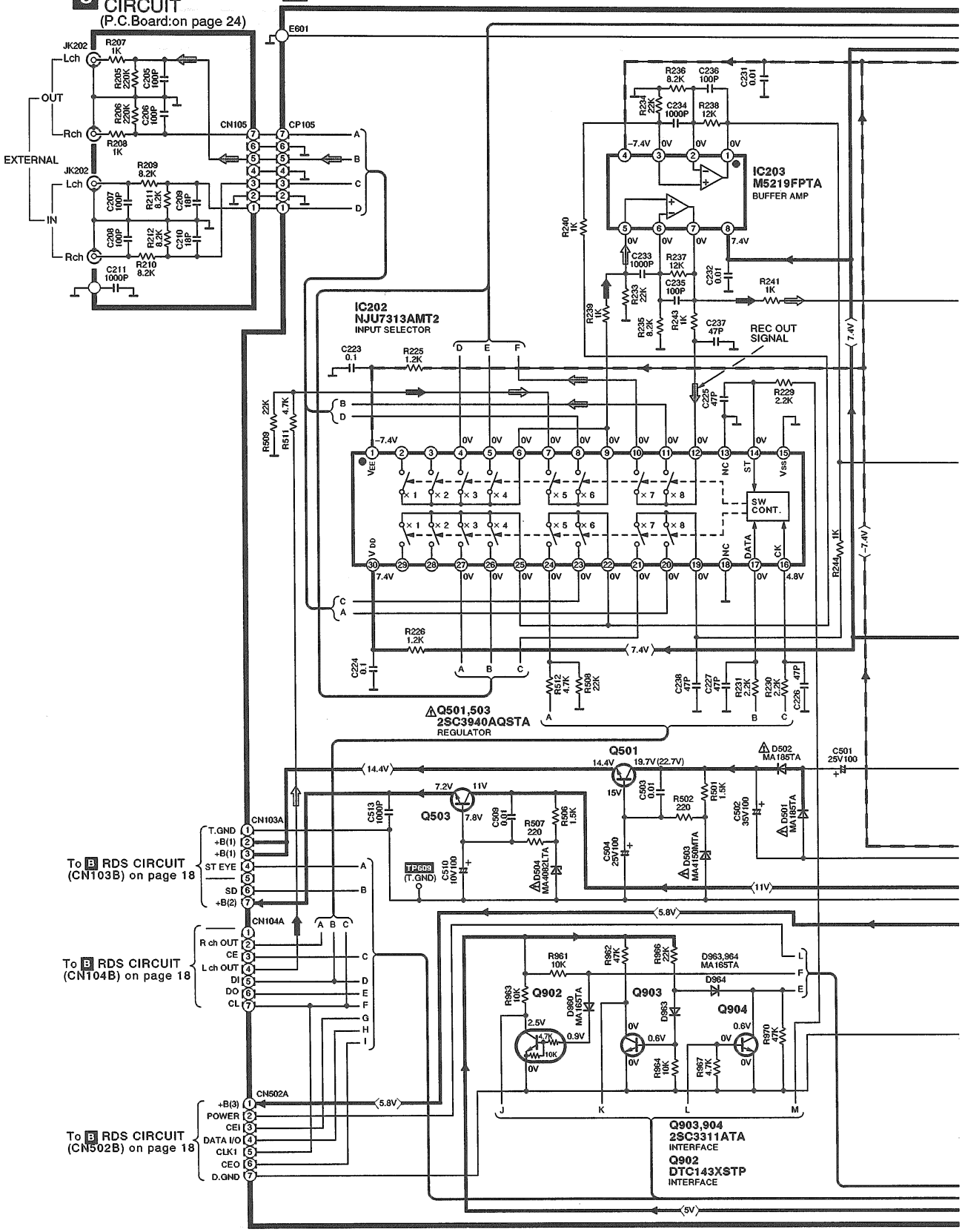
B RDS CIRCUIT (P.C.Board:on page 24)

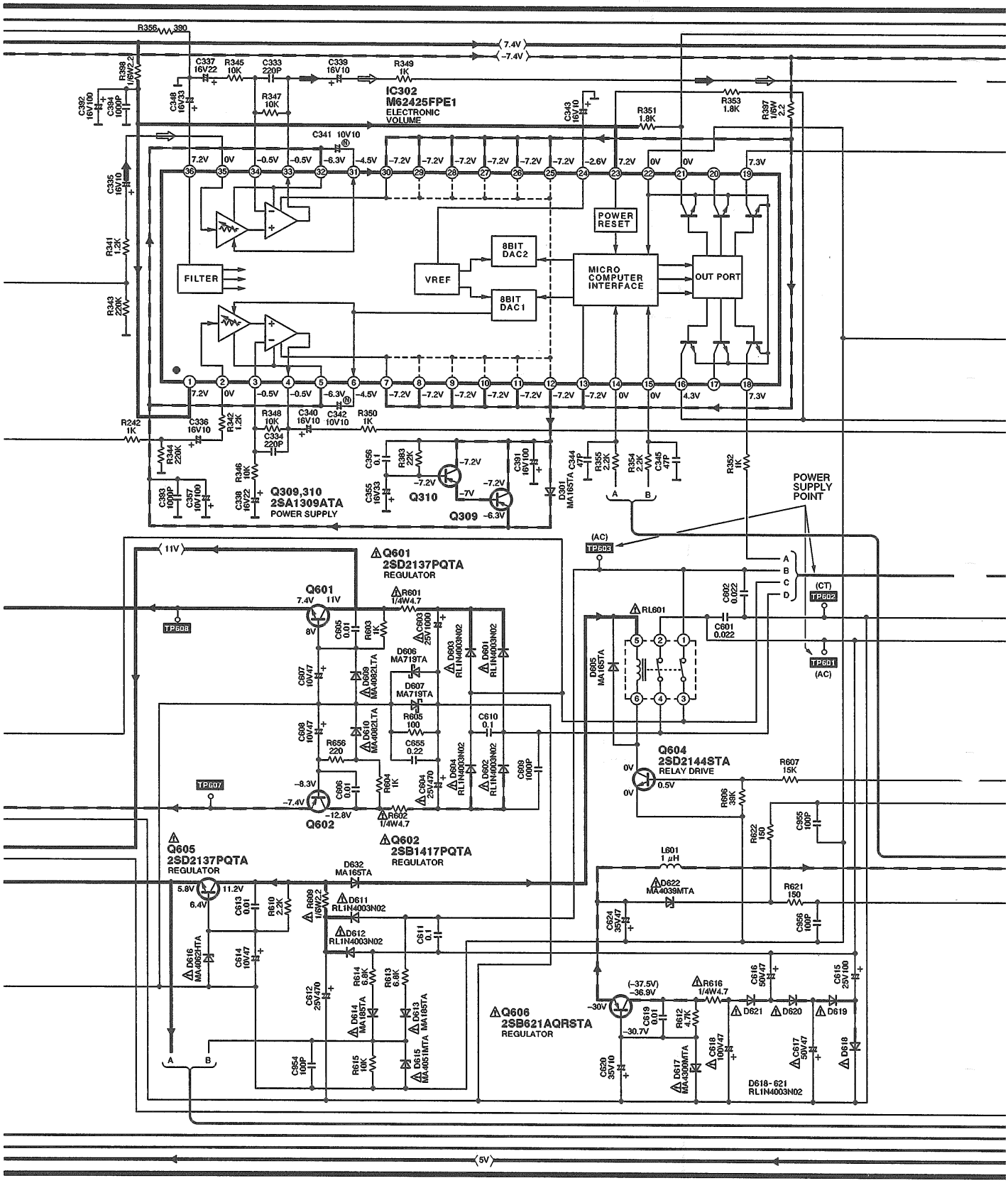


Notes: ● ⇨ : FM signal ● ⇨ : Rec out signal
● ➡ : AM signal

C INPUT/OUTPUT CIRCUIT
(P.C.Board:on page 24)

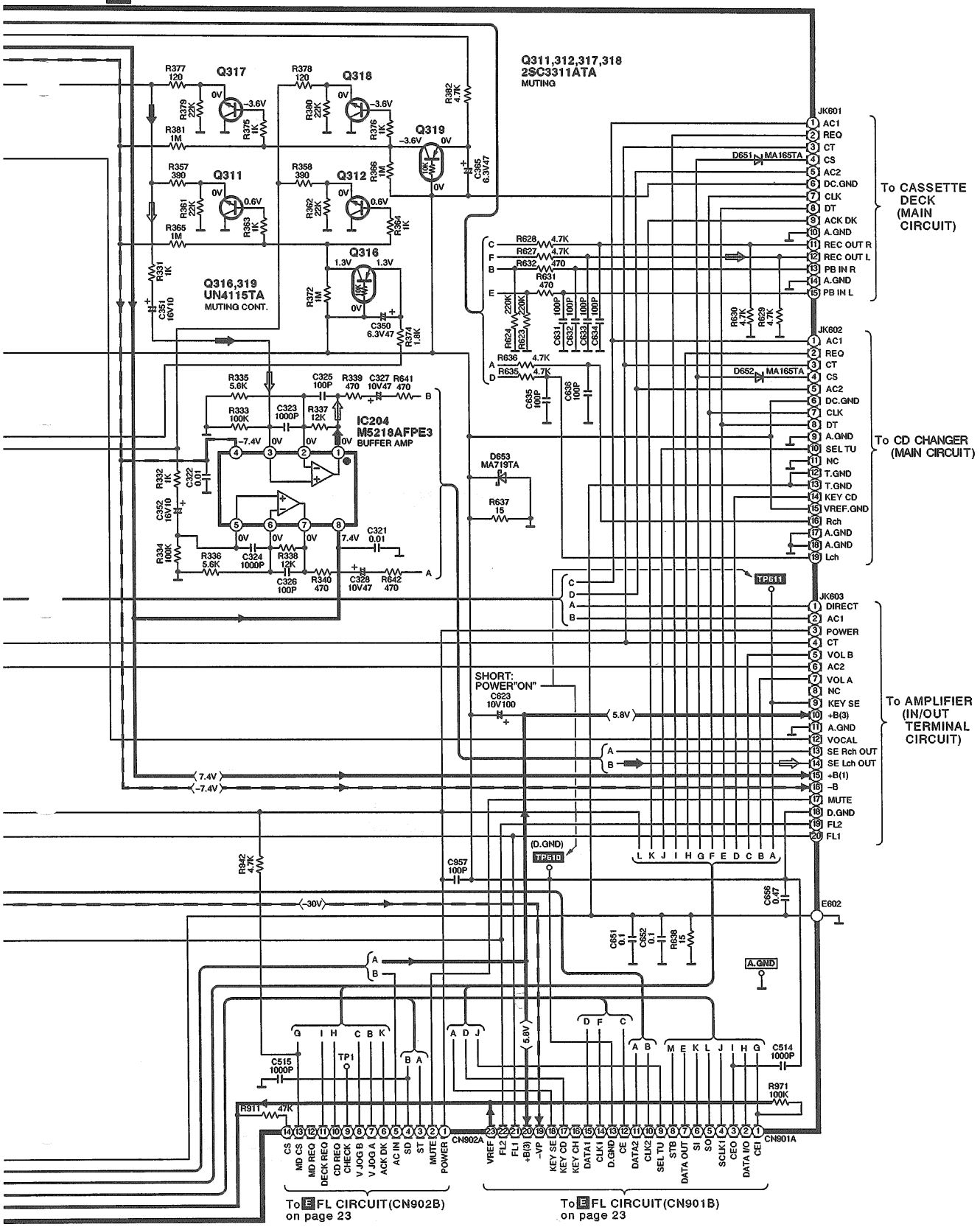
D MAIN CIRCUIT (P.C.Board:on page 25)



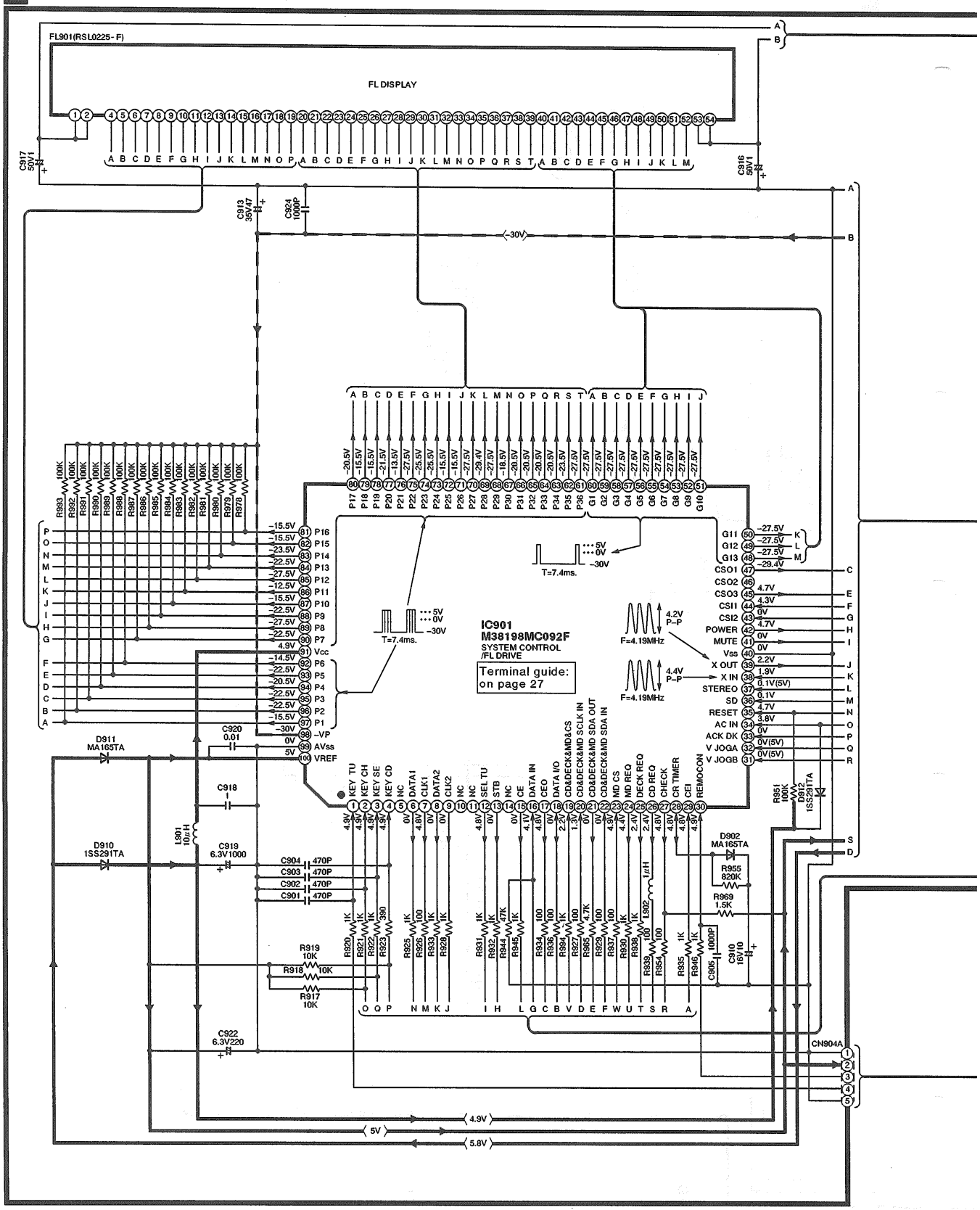

IC302
M62425FPE1
ELECTRONIC VOLUME
FILTER
VREF
8BIT DAC2
8BIT DAC1
MICRO COMPUTER INTERFACE
OUT PORT
POWER RESET
Q309,310
2SA1309ATA
POWER SUPPLY
Q310
Q309
Q601
2SD2137PQTA
REGULATOR
Q602
2SB1417PQTA
REGULATOR
Q604
2SD2144STA
RELAY DRIVE
Q605
2SD2137PQTA
REGULATOR
Q606
2SB621AQRSTA
REGULATOR
POWER SUPPLY POINT
RL601
D618-621
RL1N4003N02

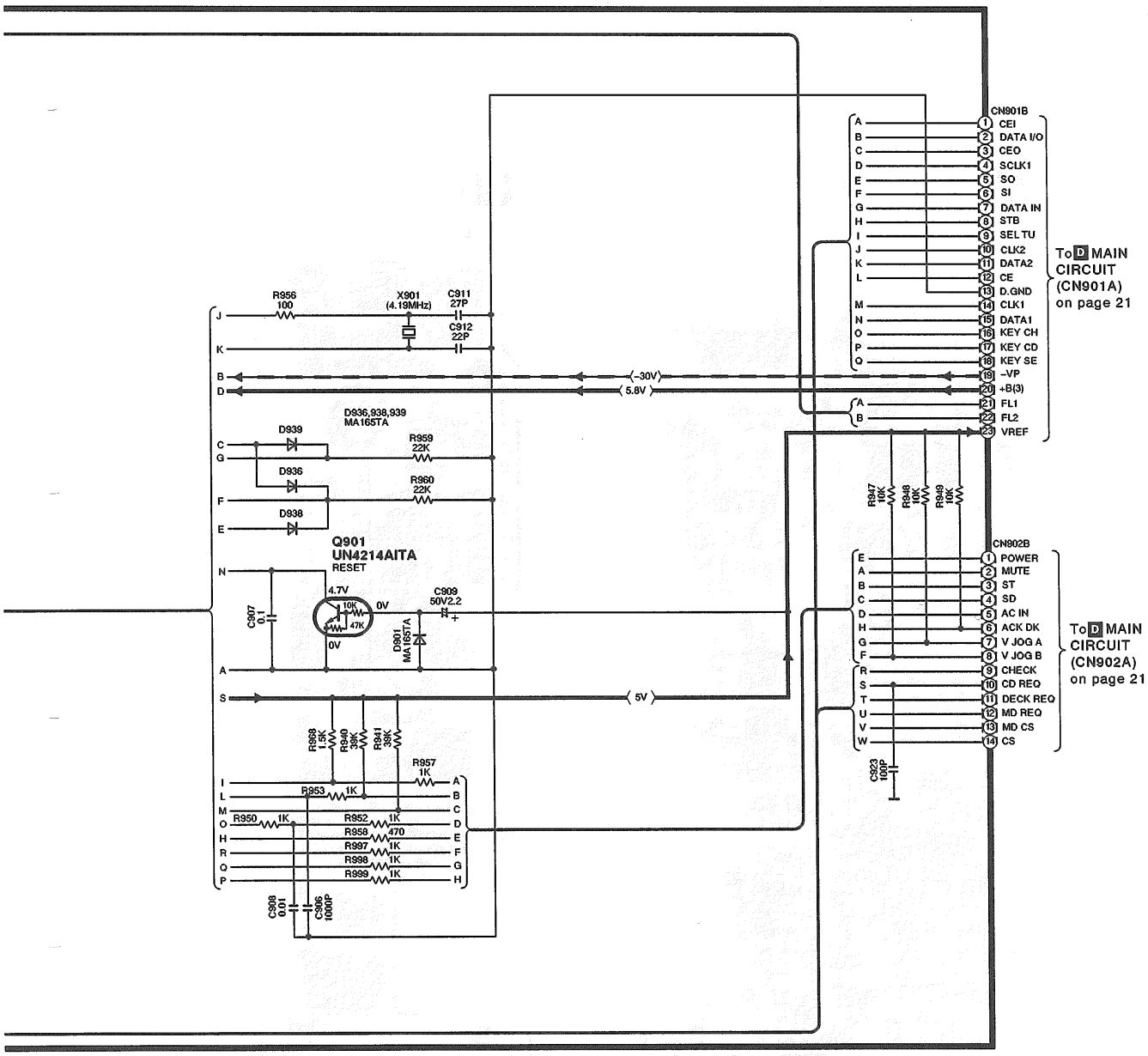
Notes: ● ⇨ : FM signal ● ⇨ : Rec out signal
● ➡ : AM signal

D MAIN CIRCUIT (P.C.Board:on page 25)

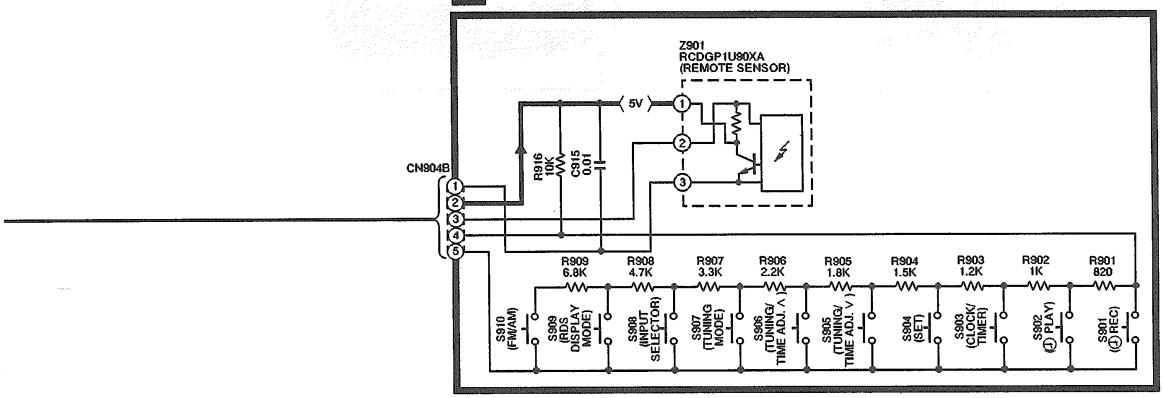


E FL CIRCUIT (P.C.Board:on page 26)





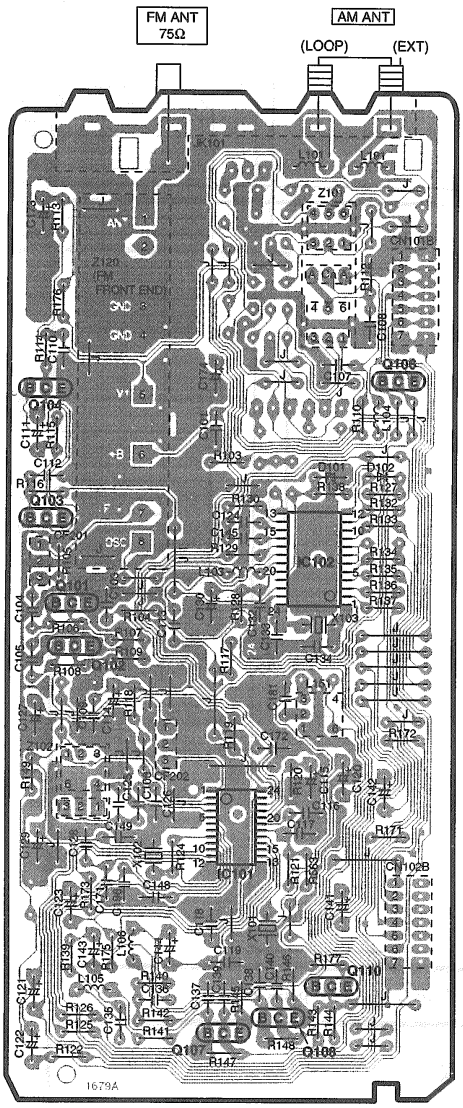
F OPERATION CIRCUIT (P.C.Board:on page 26)



Printed Circuit Board Diagram

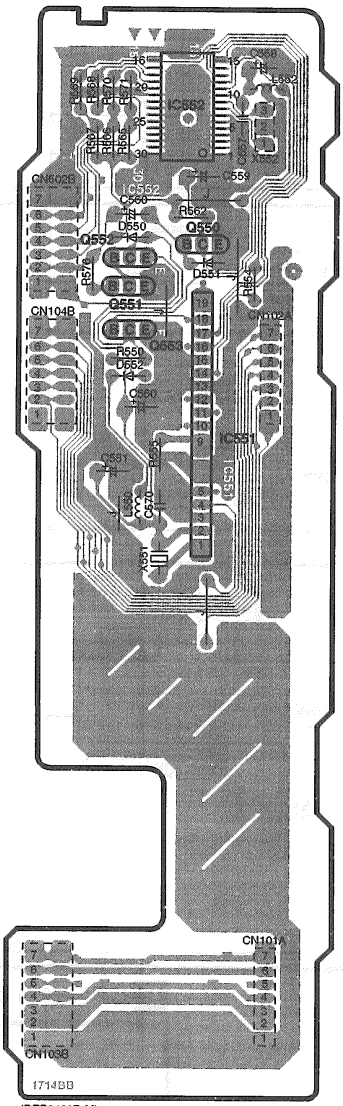
(This printed circuit board diagram may be modified at any time with the development of new technology.)

A TUNER P.C.B.



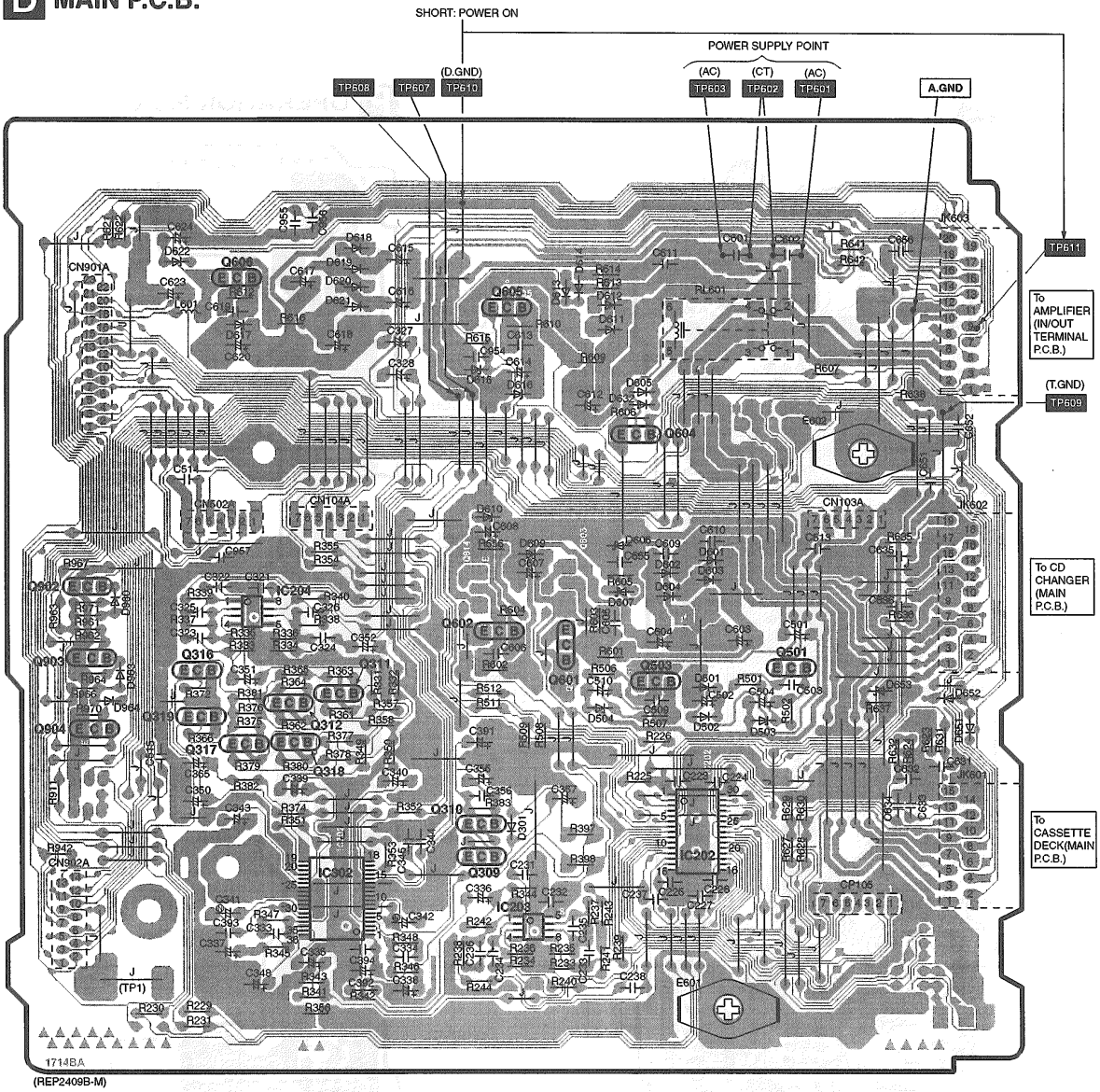
(REP2374A-T)

B RDS P.C.B.



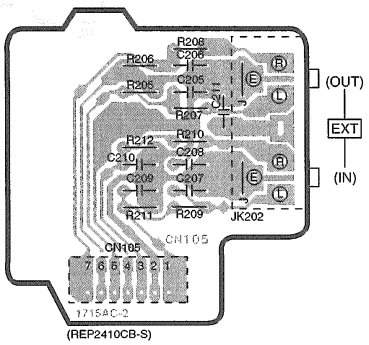
(REP2409B-M)

D MAIN P.C.B.



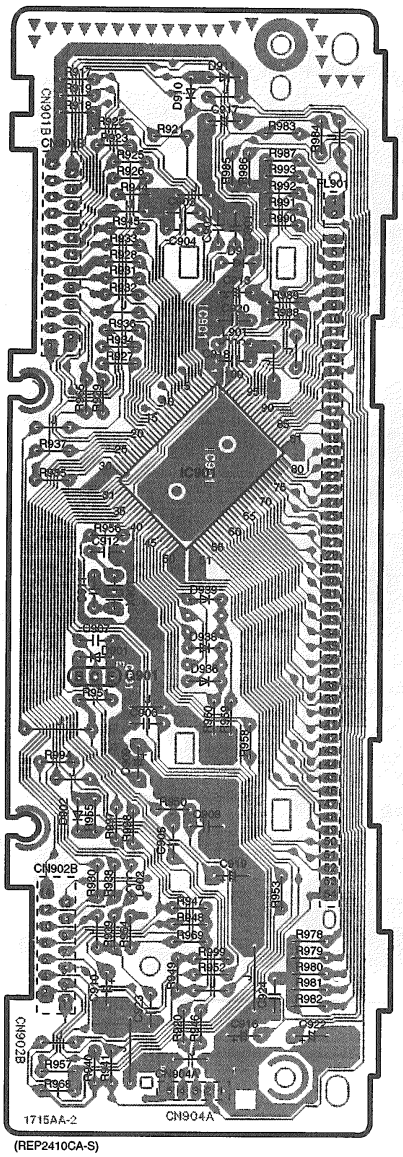
(REP2409B-M)

C INPUT/OUTPUT P.C.B.



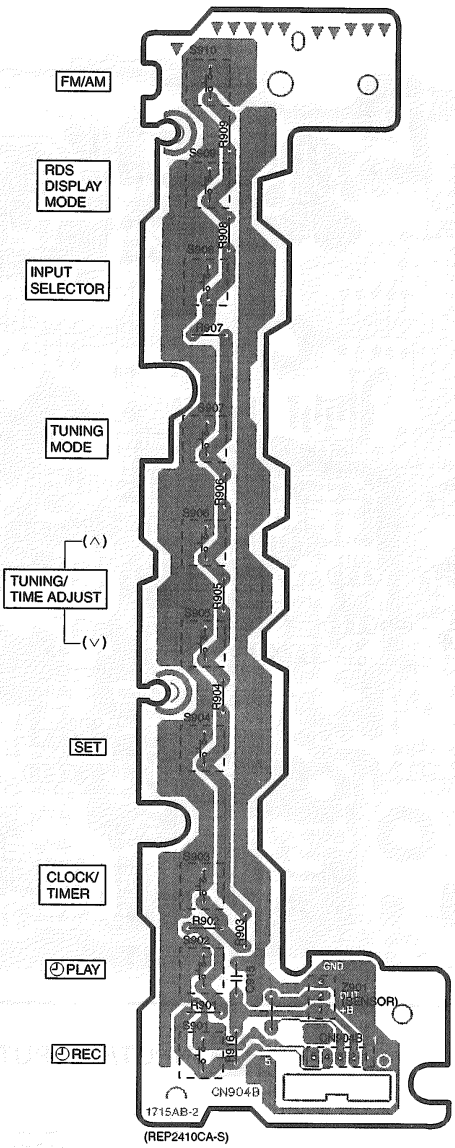
(REP2410CB-S)

E FL P.C.B.



(REP2410CA-S)

F OPERATION P.C.B.



(REP2410CA-S)

■ Terminal Function of IC's

● IC901 (M38198MC092F): SYSTEM CONTROL/ FL DRIVE

Pin No.	Mark	I/O	Function
1	KEY-TU	I	Tuner operation switch signal input
2	KEY-CH	I	Not used,open
3	KEY-SE	I	Operation switch signal input for SE-HD81
4	KEY-CD	I	Operation switch signal input for SL-HD81
5	NC	—	Not used
6	DATA1	O	Serial data output for IC102 and IC202
7	CLK1	O	Clock output for IC102, IC202 and IC552
8	DATA2	O	Serial data output for IC302
9	CLK2	O	Clock output for IC302
10	NC	—	Not used, open
11	NC	—	Not used, open
12	SEL_TU	O	Not used, open with SL-HD81
13	STB	O	Strobe signal output for IC202
14	NC	—	Not used, open
15	CE	O	Chip enable signal output for IC102
16	DATA IN	I	Data input from IC102
17	CEO	O	Serial data output for IC552
18	DATA I/O	I/O	Serial data input/output for IC552
19	CD & DECK & MD & CS	I	Serial data communication starting signal input
20	CD & DECK & MD SCLK IN	I	Serial clock input
21	CD & DECK & MD SDA OUT	O	Serial data output
22	CD & DECK & MD SDA IN	I	Serial data input
23	MD CS	—	Not used
24	MD REQ	—	Not used
25	DECK REQ	O	Request signal output for RS-HD81
26	CD REQ	O	Request signal output for SL-HD81
27	CHECK	O	Test terminal
28	CR TIMER	I/O	Capacitor and resistor oscillation terminal
29	CEI	I	Serial data input for IC552
30	REMOCON	I	Remove control signal input
31	V-JOGB	I	Volume control signal input
32	V-JOGA	I	

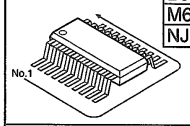
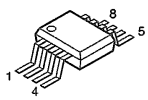
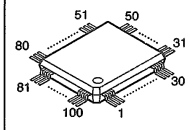
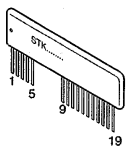
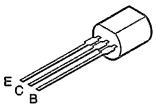
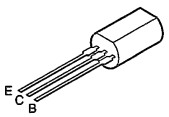
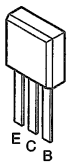
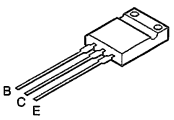
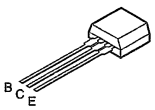
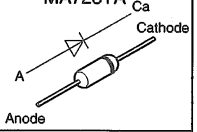
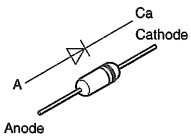
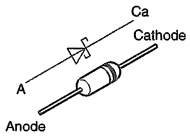
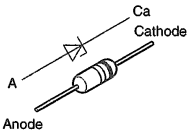
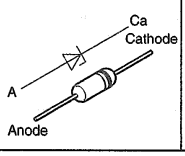
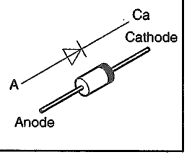
Pin No.	Mark	I/O	Function
33	ACK DK	I	Not used, connected to GND with RS-HD81
34	AC IN	I	AC power source input terminal
35	RESET	I	Reset signal input
36	SD	I	Received signal input terminal
37	STEREO	I	Stereo signal input terminal
38	X IN	I	Connected to the ceramic oscillator (F=4.19MHz)
39	X OUT	O	
40	Vss	—	GND terminal
41	MUTE	O	Muting signal output
42	POWER	O	Power control signal output
43	CS12	I	Chip select terminal
44	CS11	I	
45 ~ 47	CS03 ~ CS01	O	Chip select terminal
48 ~ 60	G13 ~ G1	O	Grid signal output
61 ~ 90	P36 ~ P7	O	Segment signal output
91	Vcc	I	Power supply terminal
92 ~ 97	P6 ~ P1	O	Segment signal output
98	-VP	I	Negative power supply terminal
99	AVSS	—	GND terminal
100	VREF	I	Reference voltage input terminal

● IC552 (LC65104A4F75): MICROCOMPUTER

Pin No.	Mark	I/O	Function
1	PB0	—	Not used
2	PB1	—	Not used
3	PB2	—	Not used
4	PB3	—	Not used
5	AV+	—	Not used
6	AV–	—	Not used
7	VSS	—	GND terminal
8	OSC1	I	Oscillating terminal (f=4MHz)
9	OSC2	O	Oscillating terminal (f=4MHz)
10	VDD	I	+5V
11	$\overline{RES}$	I	Reset signal input
12	TEST	—	Not used
13	R. DATA	I	RDS data signal input
14	R. $\overline{RES}$	O	RDS reset signal output
15	R. CLK	I	RDS clock signal input

Pin No.	Mark	I/O	Function
16	R. STRT	I	RDS start signal input
17	CEI	I	Serial data input detection terminal
18	CEO	O	Serial data output detection terminal
19	CLK	I/O	Serial clock input/output terminal
20	DATA	I/O	Serial data input/output terminal
21	PD0	—	Not used
22	PD1	—	Not used
23	PD2	—	Not used
24	PD3	—	Not used
25	PE0	—	Not used
26	PE1	—	Not used
27	SSL	—	Not used
28	PA1	—	Not used
29	PA2	—	Not used
30	PA3	—	Not used

■ Type Illustration of IC's, Transistors and Diodes

LA1832MH-TEL 24PIN LC7218M-TE-L 24PIN LC65104A4F75 30PIN M62425FPE1 36PIN NJU7313AMT2 30PIN 	M5218AFPE3 M5219FPTA 	M38198MC092F 	STK311-010 	2SB621AQRSTA 	
2SC3940AQSTA 	 2SA1309ATA UN411FTA 2SC2785FETA UN4111AITA 2SC2787LTA UN4115TA 2SC3311ATA UN4211AITA 2SC3311ARSTA UN4214AITA	2SB1417PQTA 2SD2137PQTA 	2SD2144STA DTC143XSTP 	1SS291TA MA165TA MA723TA 	
MA185TA 	MA719TA 	 MA4039MTA MA4051MTA MA4062HTA MA4082LTA	MA4150MTA MA4300MTA 	RL1N4003N02 	

Replacement Parts List

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

*Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)

*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RGK0817-1M	SIDE PANEL(L)	1	
2	RGK0818-1M	SIDE PANEL(R)	1	
3	RHD30073-K	SCREW	4	
4	RKA0076-N	FOOT	4	
5	XTB3+8JFZ	SCREW	1	
6	REZ0883	FFC(14P)	1	
7	REZ0944	FFC(23P)	1	
8	XTB3+12JFZ	SCREW	4	
9	XTBS3+8JFZ1	SCREW	10	
10	SHE170-2	P.C.B. SUPPORT	4	
11	RGU1394A-S	BUTTON	1	
12	RMN0195	FL HOLD PIECE	2	
13	XTBS26+8J	SCREW	9	
14	RFKGTHD81E-N	FRONT PANEL ASS'Y	1	
15	RGK0819-N3	SIDE ORNEMENT(L)	1	
16	RGK0820-N3	SIDE ORNAMENT(R)	1	
C101	ECBT1C103NS5	16V 0.01U	1	
C103	ECBT1C103NS5	16V 0.01U	1	
C104,05	ECBT1H102KB5	50V 1000P	2	
C106	ECBT1C103NS5	16V 0.01U	1	
C107	ECBT1H473ZF5	50V 0.047U	1	
C108	ECBT1H8R2KC5	50V 8.2P	1	
C109,10	ECBT1C103NS5	16V 0.01U	2	
C111	ECEA1EKA4R7B	25V 4.7U	1	
C112	ECBT1C103NS5	16V 0.01U	1	
C113	ECBT1H102KB5	50V 1000P	1	
C114	RCE1HKA3R3BG	50V 3.3U	1	
C115	ECEA1EKA4R7B	25V 4.7U	1	
C116	ECBT1C822KS5	16V 8200P	1	
C117	ECQP1391JZ3	100V 390P	1	
C118,19	ECFR1C103KR	16V 0.01U	2	
C120,21	ECEA1HKA010B	50V 1U	2	
C122	ECEA1HKA2R2B	50V 2.2U	1	
C123	ECEA1HKA010B	50V 1U	1	
C124	ECBT1H102KB5	50V 1000P	1	
C125	ECBT1H150JC5	50V 15P	1	
C126	ECBT1H473ZF5	50V 0.047U	1	
C127	ECEA1CKA220B	16V 22U	1	
C128	ECBT1H102KB5	50V 1000P	1	
C129,30	ECEA0JKA101B	6.3V 100U	2	
C132	ECBT1H102KB5	50V 1000P	1	
C133,34	ECBT1H270JU5	50V 27P	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C135,36	ECBT1C103KS5	16V 0.01U	2	
C137,38	ECBT1H561KB5	50V 560P	2	
C139,40	ECBT1C682KR5	16V 6800P	2	
C141-44	ECEA1HKA010B	50V 1U	4	
C145	ECBT1H220JC5	50V 22P	1	
C148	ECBT1C103NS5	16V 0.01U	1	
C149	ECBT1H104ZF5	50V 0.1U	1	
C171,72	ECBT1H102KB5	50V 1000P	2	
C173	ECEA1CKA220B	16V 22U	1	
C174	RCE1CKA100BG	16V 10U	1	
C181	ECBT1H471KB5	50V 470P	1	
C196	ECBT1H102KB5	50V 1000P	1	
C205-08	ECBT1H101KB5	50V 100P	4	
C209,10	ECBT1H180J5	50V 18P	2	
C211	ECBT1H102KB5	50V 1000P	1	
C223,24	ECBT1H104ZF5	50V 0.1U	2	
C225-27	ECBT1H470J5	50V 47P	3	
C231,32	ECBT1E103ZF5	25V 0.01U	2	
C233,34	ECBT1H102KB5	50V 1000P	2	
C235,36	ECBT1H101KB5	50V 100P	2	
C237,38	ECBT1H470J5	50V 47P	2	
C321,22	ECBT1E103ZF5	25V 0.01U	2	
C323,24	ECBT1H102KB5	50V 1000P	2	
C325,26	ECBT1H101KB5	50V 100P	2	
C327,28	RCE1AKA470BG	10V 47U	2	
C333,34	ECBT1H221KB5	50V 220P	2	
C335,36	RCE1CKA100BG	16V 10U	2	
C337,38	ECEA1CKA220B	16V 22U	2	
C339,40	RCE1CKA100BG	16V 10U	2	
C341,42	ECEA1AKN100B	10V 10U	2	
C343	RCE1CKA100BG	16V 10U	1	
C344,45	ECBT1H470J5	50V 47P	2	
C348	ECEA1CKA330B	16V 33U	1	
C350	ECEA0JKA470B	6.3V 47U	1	
C351,52	RCE1CKA100BG	16V 10U	2	
C355	ECEA1CKA330B	16V 33U	1	
C356	ECBT1H104ZF5	50V 0.1U	1	
C357	RCE1AKA101BG	10V 100U	1	
C365	ECEA0JKA470B	6.3V 47U	1	
C391,92	ECEA1CKA101B	16V 100U	2	
C393,94	ECBT1H102KB5	50V 1000P	2	
C501	ECEA1EKA101B	25V 100U	1	
C502	ECA1VM101B	35V 100U	1	
C503	ECBT1E103ZF5	25V 0.01U	1	
C504	ECEA1EKA101B	25V 100U	1	
C509	ECBT1E103ZF5	25V 0.01U	1	
C510	RCE1AKA101BG	10V 100U	1	
C513-15	ECBT1H102KB5	50V 1000P	3	
C550,51	ECA0JKF101B	6.3V 100U	2	
C557	ECBT1H102KB5	50V 1000P	1	
C558	ECEA0JKA101B	6.3V 100U	1	
C559,60	ECEA1HKA010B	50V 1U	2	
C570	ECBT1H102KB5	50V 1000P	1	
C601,02	ECKR1H223ZF5	50V 0.022U	2	
⚠ C603	ECA1EM102B	25V 1000U	1	
⚠ C604	RCE1EM471BV	25V 470U	1	
C605,06	ECBT1E103ZF5	25V 0.01U	2	
C607,08	RCE1AKA470BG	10V 47U	2	
C609	ECBT1H102KB5	50V 1000P	1	
C610,11	ECBT1H104ZF5	50V 0.1U	2	
C612	RCE1EM471BV	25V 470U	1	
C613	ECBT1E103ZF5	25V 0.01U	1	
C614	RCE1AKA470BG	10V 47U	1	
C615	ECEA1EKA101B	25V 100U	1	
⚠ C616	ECA1HM470B	50V 47U	1	
⚠ C618	ECA2AM470B	100V 47U	1	
C619	ECKR1H103ZF5	50V 0.01U	1	
C620	RCE1VKA100BG	35V 10U	1	
C623	RCE1AKA101BG	10V 100U	1	
C624	ECEA1VKA470B	35V 47U	1	
C631-36	ECBT1H101KB5	50V 100P	6	
C651,52	ECBT1H104ZF5	50V 0.1U	2	
C655	ECQV1H224JM3	50V 0.22U	1	
C656	ECQV1H474JM3	50V 0.47U	1	
C901-04	ECBT1H471KB5	50V 470P	4	

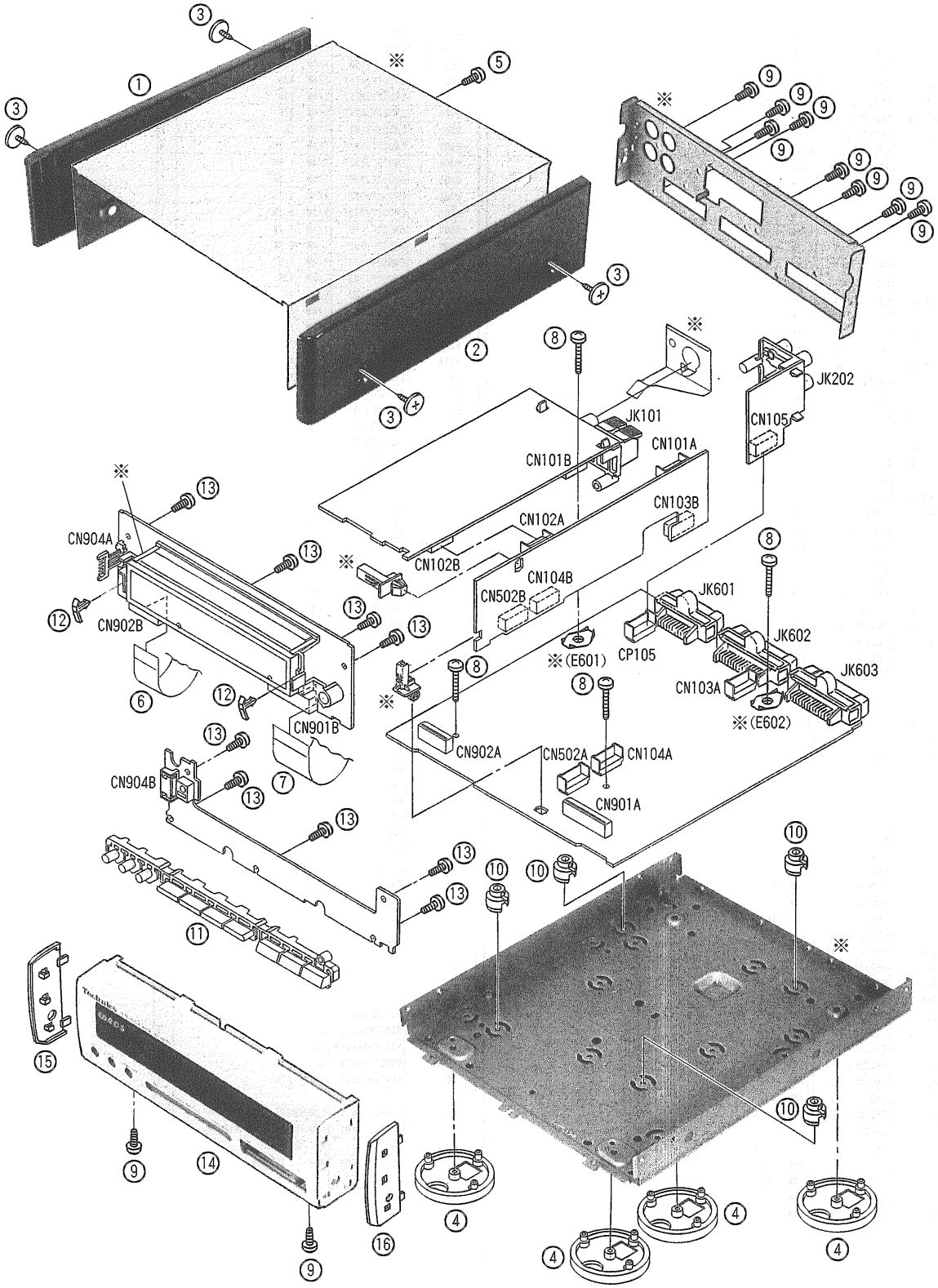
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C905,06	ECBT1H102KB5	50V 1000P	2	
C907	ECBT1H104ZF5	50V 0.1U	1	
C908	ECBT1E103ZF5	25V 0.01U	1	
C909	ECEA1HKA2R2B	50V 2.2U	1	
C910	RCE1CKA100BG	16V 10U	1	
C911	ECBT1H270JU5	50V 27P	1	
C912	ECBT1H220GC5	50V 22P	1	
C913	ECEA1VKA470B	35V 47U	1	
C915	ECBT1E103ZF5	25V 0.01U	1	
C916,17	ECEA1HKA010B	50V 1U	2	
C918	ECBT1C105ZF5	16V 1U	1	
C919	RCE0JU102BV	6.3V 1000U	1	
C920	ECBT1E103ZF5	25V 0.01U	1	
C922	ECEA0JKA221B	6.3V 220U	1	
C923	ECBT1H101KB5	50V 100P	1	
C924	ECBT1H102KB5	50V 1000P	1	
C954-57	ECBT1H101KB5	50V 100P	4	
CF201	RLFFETNGD01L	CERAMIC FILTER	1	
CF202	RLFFETMGD01L	CERAMIC FILTER	1	
CN101A	RJT057W007-1	CONNECTOR(7P)	1	
CN101B	RJU057W007	SOCKET(7P)	1	
CN102A	RJT057W007-1	CONNECTOR(7P)	1	
CN102B	RJU057W007	SOCKET(7P)	1	
CN103A	RJT057W007-1	CONNECTOR(7P)	1	
CN103B	RJU057W007	SOCKET(7P)	1	
CN104A	RJT057W007-1	CONNECTOR(7P)	1	
CN104B,05	RJU057W007	SOCKET(7P)	2	
CN502A	RJT057W007-1	CONNECTOR(7P)	1	
CN502B	RJU057W007	SOCKET(7P)	1	
CN901A	RJS1A6823	CONNECTOR(23P)	1	
CN901B	RJS1A6223-1	CONNECTOR(23P)	1	
CN902A	RJS1A6814	CONNECTOR(14P)	1	
CN902B	RJS1A6214-1	CONNECTOR(14P)	1	
CN904A	RJT066H05A	CONNECTOR(5P)	1	
CN904B	RJU066H05	SOCKET(5P)	1	
CP105	RJT057W007-1	CONNECTOR(7P)	1	
⚠ D101	MA4051MTA	DIODE	1	
D102	MA165	DIODE	1	
D301	MA165	DIODE	1	
⚠ D501,02	MA185TA	DIODE	2	
⚠ D503	MA4150MTA	DIODE	1	
⚠ D504	MA4082LTA	DIODE	1	
D550,51	MA165	DIODE	2	
D552	MA723TA	DIODE	1	
⚠ D601-04	RL1N4003N02	DIODE	4	
D605	MA165	DIODE	1	
D606,07	MA719TA	DIODE	2	
⚠ D609,10	MA4082LTA	DIODE	2	
⚠ D611,12	RL1N4003N02	DIODE	2	
⚠ D613,14	MA185TA	DIODE	2	
⚠ D615	MA4051MTA	DIODE	1	
⚠ D616	MA4062-H	DIODE	1	
⚠ D617	MA4300MTA	DIODE	1	
⚠ D618-21	RL1N4003N02	DIODE	4	
⚠ D622	MA4039MTA	DIODE	1	
D632	MA165	DIODE	1	
D651,52	MA165	DIODE	2	
D653	MA719TA	DIODE	1	
D901,02	MA165	DIODE	2	
D910	1SS291TA	DIODE	1	
D911	MA165	DIODE	1	
D912	1SS291TA	DIODE	1	
D936	MA165	DIODE	1	
D938,39	MA165	DIODE	2	
D960	MA165	DIODE	1	
D963,64	MA165	DIODE	2	
FL901	RSL0225-F	DISPLAY TUBE	1	
IC101	LA1832MH-TEL	IC	1	
IC102	LC7218M-TE-L	IC	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
IC202	NJU7313AMT2	IC	1	
IC203	M5219FPTA	IC	1	
IC204	M5218AFPE3	IC	1	
IC302	M62425FPE1	IC	1	
IC551	STK311-010	IC	1	
IC552	LC65104A4F75	IC	1	
IC901	M38198MC092F	IC	1	
JK101	RJH5210M	FM/AM ANT	1	
JK202	SJF3069-5N	EXT IN/OUT	1	
JK601	RJT065K15	CONNECTOR(15P)	1	
JK602	RJT065K19	CONNECTOR(19P)	1	
JK603	RJT065K20	CONNECTOR(20P)	1	
L101	ELESNR68MA	COIL	1	
L103	ELEXTR47MA9	COIL	1	
L104	ELEXT1R0KA9	COIL	1	
L105,06	ELELN822KL	COIL	2	
L151	SLM1B10M-1M	COIL	1	
L191	ELESNR68MA	COIL	1	
L550	ELEXT101KA9	COIL	1	
L552	ELEXT101KA9	COIL	1	
L601	ELEXT1R0KA9	COIL	1	
L901	RLQA100JT-Y	COIL	1	
L902	ELEXT1R0KA9	COIL	1	
Q101,02	2SC2787L	TRANSISTOR	2	
Q103,04	2SC2785FETA	TRANSISTOR	2	
Q106	UN4111	TRANSISTOR	1	
Q107,08	2SC3311ARSTA	TRANSISTOR	2	
Q110	2SC3311ARSTA	TRANSISTOR	1	
Q309,10	2SA1309ATA	TRANSISTOR	2	
Q311,12	2SC3311AR	TRANSISTOR	2	
Q316	UN4115TA	TRANSISTOR	1	
Q317,18	2SC3311AR	TRANSISTOR	2	
Q319	UN4115TA	TRANSISTOR	1	
⚠ Q501	2SC3940AQSTA	TRANSISTOR	1	
⚠ Q503	2SC3940AQSTA	TRANSISTOR	1	
Q550,51	UN4211TA	TRANSISTOR	2	
Q552	UN411FTA	TRANSISTOR	1	
Q553	UN4211TA	TRANSISTOR	1	
⚠ Q601	2SD2137PQTA	TRANSISTOR	1	
⚠ Q602	2SB1417PQTA	TRANSISTOR	1	
Q604	2SD2144STA	TRANSISTOR	1	
⚠ Q605	2SD2137PQTA	TRANSISTOR	1	
⚠ Q606	2SB621AQRSTA	TRANSISTOR	1	
Q901	UN4214TA	TRANSISTOR	1	
Q902	DTC143XSTP	TRANSISTOR	1	
Q903,04	2SC3311AR	TRANSISTOR	2	
R103	ERDS2FJ101	1/4W 100	1	
R104	ERDS2FJ103	1/4W 10K	1	
R105	ERDS2TJ471T	1/4W 470	1	
R106	ERDS2FJ474	1/4W 470K	1	
R107	ERDS2TJ331T	1/4W 330	1	
R108	ERDS2FJ474	1/4W 470K	1	
R109	ERDS2TJ331T	1/4W 330	1	
R110	ERDS2FJ102	1/4W 1K	1	
R112	ERDS2FJ104	1/4W 100K	1	
R113	ERDS2FJ103	1/4W 10K	1	
R114	ERDS2FJ562	1/4W 5.6K	1	
R115	ERDS2TJ561T	1/4W 560	1	
R116	ERDS2FJ102	1/4W 1K	1	
R117	ERDS2FJ823	1/4W 82K	1	
R118	ERDS2FJ472	1/4W 4.7K	1	
R119	ERDS2FJ103	1/4W 10K	1	
R120	ERDS2TJ473T	1/4W 47K	1	
R121	ERDS2TJ332T	1/4W 3.3K	1	
R122	ERDS2FJ272	1/4W 2.7K	1	
R124	ERDS2TJ271T	1/4W 270	1	
R125,26	ERDS2TJ152T	1/4W 1.5K	2	
R127	ERDS2FJ103	1/4W 10K	1	
R128	ERDS2TJ820T	1/4W 82	1	
R129	ERDS2TJ473T	1/4W 47K	1	
R130	ERDS2FJ103	1/4W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R132	ERDS2FJ103	1/4W 10K	1	
R133-37	ERDS2FJ102	1/4W 1K	5	
R138	ERDS2FJ103	1/4W 10K	1	
R139,40	ERDS2FJ272	1/4W 2.7K	2	
R141,42	ERDS2FJ102	1/4W 1K	2	
R143,44	ERDS2FJ222	1/4W 2.2K	2	
R145,46	ERDS2TJ821T	1/4W 820	2	
R147,48	ERDS2FJ474	1/4W 470K	2	
R149	ERDS2FJ680	1/4W 68	1	
R171,72	ERDS2FJ102	1/4W 1K	2	
R173	ERDS2TJ471T	1/4W 470	1	
R175	ERDS2FJ102	1/4W 1K	1	
R176	ERDS2TJ391T	1/4W 390	1	
R177	ERDS2FJ472	1/4W 4.7K	1	
R205,06	ERDS2FJ224	1/4W 220K	2	
R207,08	ERDS2FJ102	1/4W 1K	2	
R209-12	ERDS2TJ822T	1/4W 8.2K	4	
R225,26	ERDS2TJ122T	1/4W 1.2K	2	
R229-31	ERDS2FJ222	1/4W 2.2K	3	
R233,34	ERDS2TJ223T	1/4W 22K	2	
R235,36	ERDS2TJ822T	1/4W 8.2K	2	
R237,38	ERDS2TJ123T	1/4W 12K	2	
R239-44	ERDS2FJ102	1/4W 1K	6	
R331,32	ERDS2FJ102	1/4W 1K	2	
R333,34	ERDS2FJ104	1/4W 100K	2	
R335,36	ERDS2FJ562	1/4W 5.6K	2	
R337,38	ERDS2TJ123T	1/4W 12K	2	
R339,40	ERDS2TJ471T	1/4W 470	2	
R341,42	ERDS2TJ122T	1/4W 1.2K	2	
R343,44	ERDS2FJ224	1/4W 220K	2	
R345-48	ERDS2FJ103	1/4W 10K	4	
R349,50	ERDS2FJ102	1/4W 1K	2	
R351	ERDS2TJ182T	1/4W 1.8K	1	
R352	ERDS2FJ102	1/4W 1K	1	
R353	ERDS2TJ182T	1/4W 1.8K	1	
R354,55	ERDS2FJ222	1/4W 2.2K	2	
R356-58	ERDS2TJ391T	1/4W 390	3	
R361,62	ERDS2TJ223T	1/4W 22K	2	
R363,64	ERDS2FJ102	1/4W 1K	2	
R365,66	ERDS2FJ105	1/4W 1M	2	
R372	ERDS2FJ105	1/4W 1M	1	
R374	ERDS2TJ182T	1/4W 1.8K	1	
R375,76	ERDS2FJ102	1/4W 1K	2	
R377,78	ERDS2TJ121T	1/4W 120	2	
R379,80	ERDS2TJ223T	1/4W 22K	2	
R381	ERDS2FJ105	1/4W 1M	1	
R382	ERDS2FJ472	1/4W 4.7K	1	
R383	ERDS2TJ223T	1/4W 22K	1	
R397,98	ERQ16NKW2R2E	1/6W 2.2	2	
R501	ERDS2TJ152T	1/4W 1.5K	1	
R502	ERDS2TJ221T	1/4W 220	1	
R506	ERDS2TJ152T	1/4W 1.5K	1	
R507	ERDS2TJ221T	1/4W 220	1	
R508,09	ERDS2TJ223T	1/4W 22K	2	
R511,12	ERDS2FJ472	1/4W 4.7K	2	
R550	ERDS2FJ472	1/4W 4.7K	1	
R554	ERDS2FJ102	1/4W 1K	1	
R555	ERDS2TJ333T	1/4W 33K	1	
R562	ERDS2TJ473T	1/4W 47K	1	
R563	ERDS2TJ332T	1/4W 3.3K	1	
R565-67	ERDS2TJ332T	1/4W 3.3K	3	
R568-71	ERDS2FJ101	1/4W 100	4	
R576	ERDS2FJ102	1/4W 1K	1	
⚠ R601,02	ERD2FCJ4R7	1/4W 4.7	2	
R603,04	ERDS2FJ102	1/4W 1K	2	
R605	ERDS2FJ101	1/4W 100	1	
R606	ERDS2FJ393	1/4W 39K	1	
R607	ERDS2TJ153T	1/4W 15K	1	
⚠ R609	ERQ16NKW2R2E	1/6W 2.2	1	
R610	ERDS2FJ222	1/4W 2.2K	1	
R612	ERDS2FJ472	1/4W 4.7K	1	
R613,14	ERDS2FJ682	1/4W 6.8K	2	
R615	ERDS2FJ103	1/4W 10K	1	
⚠ R616	ERDS2FJ4R7	1/4W 4.7	1	
R621,22	ERDS2TJ151T	1/4W 150	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R623,24	ERDS2FJ224	1/4W 220K	2	
R627-30	ERDS2FJ472	1/4W 4.7K	4	
R631,32	ERDS2TJ471T	1/4W 470	2	
R635,36	ERDS2FJ472	1/4W 4.7K	2	
R637,38	ERDS2FJ150	1/4W 15	2	
R641,42	ERDS2TJ471T	1/4W 470	2	
R656	ERDS2TJ221T	1/4W 220	1	
R901	ERDS2TJ821T	1/4W 820	1	
R902	ERDS2FJ102	1/4W 1K	1	
R903	ERDS2TJ122T	1/4W 1.2K	1	
R904	ERDS2TJ152T	1/4W 1.5K	1	
R905	ERDS2TJ182T	1/4W 1.8K	1	
R906	ERDS2FJ222	1/4W 2.2K	1	
R907	ERDS2TJ332T	1/4W 3.3K	1	
R908	ERDS2FJ472	1/4W 4.7K	1	
R909	ERDS2FJ682	1/4W 6.8K	1	
R911	ERDS2TJ473T	1/4W 47K	1	
R916-19	ERDS2FJ103	1/4W 10K	4	
R920-22	ERDS2FJ102	1/4W 1K	3	
R923	ERDS2TJ391T	1/4W 390	1	
R925	ERDS2FJ102	1/4W 1K	1	
R926,27	ERDS2FJ101	1/4W 100	2	
R928	ERDS2FJ102	1/4W 1K	1	
R929	ERDS2FJ101	1/4W 100	1	
R930-33	ERDS2FJ102	1/4W 1K	4	
R934	ERDS2FJ101	1/4W 100	1	
R935	ERDS2FJ102	1/4W 1K	1	
R936,37	ERDS2FJ101	1/4W 100	2	
R938	ERDS2FJ102	1/4W 1K	1	
R939	ERDS2FJ101	1/4W 100	1	
R940,41	ERDS2FJ393	1/4W 39K	2	
R942	ERDS2FJ472	1/4W 4.7K	1	
R944	ERDS2TJ473T	1/4W 47K	1	
R945,46	ERDS2FJ102	1/4W 1K	2	
R947-49	ERDS2FJ103	1/4W 10K	3	
R950	ERDS2FJ102	1/4W 1K	1	
R951	ERDS2FJ104	1/4W 100K	1	
R952,53	ERDS2FJ102	1/4W 1K	2	
R954	ERDS2FJ101	1/4W 100	1	
R955	ERDS2TJ824T	1/4W 820K	1	
R956	ERDS2FJ101	1/4W 100	1	
R957	ERDS2FJ102	1/4W 1K	1	
R958	ERDS2TJ471T	1/4W 470	1	
R959,60	ERDS2TJ223T	1/4W 22K	2	
R961	ERDS2FJ103	1/4W 10K	1	
R962	ERDS2TJ473T	1/4W 47K	1	
R963,64	ERDS2FJ103	1/4W 10K	2	
R965	ERDS2FJ472	1/4W 4.7K	1	
R966	ERDS2TJ223T	1/4W 22K	1	
R967	ERDS2FJ472	1/4W 4.7K	1	
R968,69	ERDS2TJ152T	1/4W 1.5K	2	
R970	ERDS2TJ473T	1/4W 47K	1	
R971	ERDS2FJ104	1/4W 100K	1	
R978-93	ERDS2FJ104	1/4W 100K	16	
R994	ERDS2FJ102	1/4W 1K	1	
R997-99	ERDS2FJ102	1/4W 1K	3	
⚠ RL601	RSY0017M-0	RELAY	1	
S901-10	EVQPTD05Q	SW	10	
X101	RSXZ456KM07M	OSCILLATOR	1	
X102	RLFDGT05DD	OSCILLATOR	1	
X103	RSXC7M20S05T	OSCILLATOR	1	
X551	RSXZ456KM07M	OSCILLATOR	1	
X552	RVBCST4R00MT	OSCILLATOR	1	
X901	RSXC4M19S02T	OSCILLATOR	1	
Z101	RLA2Z002M-T	COMPONENT COMBINATION	1	
Z102	RLI2Z006M-T	COMPONENT COMBINATION	1	
Z120	RAL0019	FM FRONT END	1	
Z901	RCDGP1U90XA	REMOTE SENSOR	1	

■Cabinet Parts Location



※ : Not supplies.

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